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ABSTRACT

Presented is a guide for developing a program for gifted and talented students (in grades k-8) which was originally implemented with 60 students in the Kyrene School District (Tempe, Arizona). Part I covers such program aspects as philosophy, goals, ways of dealing with opposition from teachers, parents, the community, the Board of Education, and students; instruments for identification; teacher role; and parent involvement. Described in Part II are the models and theories related to education of the gifted, definition and principals of creativity, and the Human Individual Potentials (HIP) Curriculum structure. The bulk of the document consists of curriculum unit materials for the following areas: social effectiveness (affective domain), humanities, intellectual effectiveness (cognitive domain), creativity, physical effectiveness (psychomotor domain), and recreational integrative activities. Information on unit activities usually includes entry concepts, teacher tasks, materials needed, student enabling behaviors and learnings, lesson development, and evaluation. Appended are the full report of pilot study results and a professional bibliography on giftedness. (SBH)

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Unicornucopia: A Guidebook for Gifted and Talented

Prepared by

HUMAN INDIVIDUAL POTENTIALITIES

Kyrene School District #28
8700 South Kyrene Road
Tempe, Arizona 85284

Ben Furlong, Ed.D.
Superintendent

1977

This product will be available through ERIC Clearinghouse on Handicapped and Gifted.

Additional copies of this guidebook may be obtained from:
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ESEA Title III Gifted/Guidance
1535 West Jefferson
Phoenix, Arizona 85007

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Dwayne R. Awerkamp
Doyle L. Royer
Ruben V. Hernandez
Bill M. Owens
Stephen T. Crookston
Carl L. Overby
Sarah E. Hubert
Helen M. Shafer

Superintendent: Ben Furlong, Ed.D.

Staff:	Joyce Bowen Maughan, M.C.:	Project Coordinator 1976-1977
	Klonda Bowers Ball, M.A.:	Coordinator 1974-1976
	Wyona Reeder:	Secretary/Typist/Illustrator
	Susan Harter Sager:	Curriculum Writer/Teacher
	Betty Suzuki:	Curriculum Writer/Teacher
	Carole Draper:	Curriculum Writer/Teacher
	Joyce B. Maughan, M.C.:	Project Psychologist
	Stanley R. Wurster, Ed.D.:	External Evaluator/Auditor
	John Simons, Ed.D.:	Auditor

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Introduction

The purpose of this book is to publish a guide for program development for gifted and talented in the Kyrene District and for national distribution.

Kyrene District #28 was awarded a Title III Grant, through the Elementary and Secondary Education Act, to develop an innovative program for the talented and gifted students identified in grades K - 8. The first year was basically one of planning and screening. A pilot study was conducted the second year involving a total of sixty students, (thirty in the experimental group and thirty in the control group). The development of a scope and sequence and major curriculum development were also undertaken during the second year. During the third year, the program was implemented--K - 8--with approximately 10% of the total school population. Curriculum revision, enlargement and the publication of this guide were major thrusts in the third year.

The purpose of the project, Human Individual Potentialities: A Program for the Gifted and Talented, has been to focus on "our nation's greatest natural resource," the unique strengths of students in the district.

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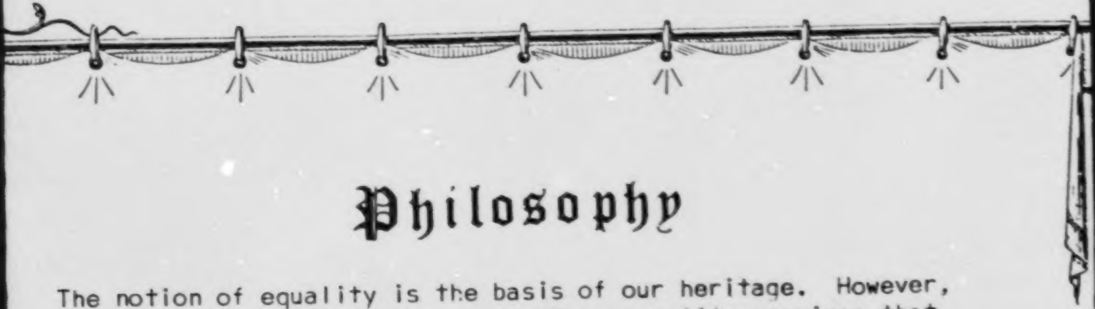
Part One



Philosophy

The notion of equality is the basis of our heritage. However, no two individuals are the same. True equality requires that there be equal respect and freedom for individual uniqueness and equal opportunity to develop unequal abilities to the fullest potential.

Mediocrity comes from the misconception that all individuals have equal capacity to learn in all areas of endeavor. Excellence lies in the development of special abilities and talents.

Gifted students have the right to an educational environment where their gifts are respected, not resented nor looked down upon. Therefore, they need certain types of programs, materials, and teachers, in order for them to more nearly achieve their potentials for themselves and for the potential contributions they may make to the community, state, and nation.

Definition

The Kyrene School District defines gifted and talented as children who excel markedly in ability to think, reason, judge, invent, or create and who need special facilities and/or educational services in order to assist them to achieve more nearly their potentials for themselves, and for the increased contributions they may make to the community, state and nation.

Kyrene School District No. 28

Philosophy of Education

This philosophy of education has been established by the Board of Trustees of the Kyrene School District to provide a broad set of internally consistent referrents which guide the activities of the members of the educational staff of the school district as they plan for and implement programs for students and youth.

It shall be the mission of the Kyrene School District to provide experiences which facilitate the growth of each student that he/she may lead a life which is personally satisfying and which contributes to the society which sustains him/her.

The broad, over-arching goals of the Kyrene School District are:

1. Development of self understanding, self respect, self direction, and self instructional skill;
2. Development of a zest for learning, an abiding interest in learning;
3. Development of a sense of social responsibility;
4. Learning how to learn, how to attack new problems, and how to acquire new knowledge;
5. Development of competence in the basic skills in reading, composition, listening, speaking and computation;
6. Development of skills in ways of creative and disciplined thinking and application of knowledge;
7. Development of fundamental understanding of the humanities and the arts, the social sciences, and the natural sciences (in the form of basic concepts and generalizations);
8. Development of skill in the exploration and clarification of values.

"Not so much a question of what content should they learn, but, what persons should they be." (Adapted from the N.E.A.'s Project on Instruction.)

The bases for all interpersonal relationships in the Kyrene School District shall be a respect for human dignity. The very foundations of our nation are rooted in this basic principle. The intrinsic worth and dignity of each individual in the school system must be recognized and must be kept in mind in the planning, implementation, and evaluation of the individual's progress and the overall effectiveness of the school system.

HJP
Program Goals

1. Each student will develop an intrinsic motivation for excellence and individual responsibility in an atmosphere conducive for exploration and discovery.

2. Each student will accept and maximize unique gifts and talents.

3. Each student will develop competencies in areas of study beyond those prescribed in the regular classroom, especially in the areas of divergent, abstract, and evaluative thinking.

4. Each student will develop a positive self concept.

5. Each student will develop the attitudes and skills necessary to interact acceptably and comfortably with others.

6. Each student will become self directing in
   (a) independent study,
   (b) problem-solving,
   (c) planning, and
   (d) critical and creative thinking skills
   with the teacher as a facilitator and an assistor.

7. Each student will receive support and guidance.

8. Each student will develop an awareness of the humanities.

9. Each student will receive directed experiences in physical effectiveness.

10. Each student will have an opportunity to interact with other gifted and talented students.

The Demand of Giftedness

Premises

1. *High level intelligence makes certain demands upon the gifted child.*
2. *Behavior of gifted children results from these demands.*
3. *There are curriculum implications inherent in these demands.*

1. To crave for knowledge - to satisfy the need to feel progress in what he is learning.
2. To feel the need to focus on or devour a subject.
3. To make observations; to see relationships.
4. To place high standards on himself.
5. To be creative or inventive; to seek an unusual or unique approach to an assignment.
6. To question generalizations.
7. To be serious-minded; to be intolerant (usually) of foolishness or silliness.
8. To concentrate - to become totally absorbed in a task - to have a longer attention span.
9. To explore wide interests at a maturity beyond his chronological age.
10. To be sensitive to honor and truth.
11. To express ideas and reactions. (Sometimes seen as argumentative.)
12. To resist routine and drill; to require unique ways of pursuing drill.
13. To work alone.
14. To be intolerant of stupidity.
15. To seek order, structure, and consistency.
16. To do critical, evaluative thinking. (May lead to critical attitude toward self and others.)
17. To be rarely satisfied with the simple and obvious.
18. To be impatient with sloppy or disorganized thinking.
19. To be sensitive and empathetic.
20. To have his intelligence responded to.
21. To seek out his mental peers.
22. To be friendly and outgoing.
23. To use his power of abstaction; to see and point out cause and effect relationships.
24. To have time for thinking - solitude.
25. To pursue a learning pace of his own. (May be fast or slow.)
26. To be outstanding in several areas but average in some.

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Myths About Gifted and Talented

Myths	Reality
1 - Identified gifted and talented students need no special help--they are smart enough to make it on their own.	1 - Gifted and talented often hide their talents in an effort to gain acceptance--they often feel different, strange, unaccepted.
2 - All gifted and talented students make good grades and are successful in school.	2 - 12% of the gifted and talented have reading disabilities--15% of identified gifted drop out of high school.
3 - All gifted and talented students are popular with their peers.	3 - Gifted and talented students' ability to conceptualize at higher levels, or do things differently than others, often frightens their peers and drives them away.
4 - Gifted and talented students represent an upper middle class elite.	4 - Giftedness and talent comes from all cultural, educational and socio-economic levels.
5 - Educators are aware of the needs of gifted and talented students.	5 - Some 57% of all U. S. school administrators surveyed stated they had no gifted and talented in their classrooms.--Report to Congress, 1973, Vol. 1 & 2.
6 - Teachers can easily take care of the gifted and talented in their regular classrooms.	6 - Teachers cannot meet the needs of children who need different kinds of educational materials than that presented in regular classrooms.
7 - Special teachers are being adequately trained for the gifted and talented.	7 - Only 12 universities in the U. S. have graduate programs in gifted and talented education.

MEANINGFUL LEARNING FOR THE GIFTED	LESS MEANINGFUL LEARNING
1. Children have ready access to library and other resource materials.	1. Teacher and materials in the classroom are the main sources of information. Children do not have the freedom to utilize library frequently and to work with other resource people.
2. Students are involved in independent study activities. Teacher does not dominate classroom, or run a "tight ship" but permits student freedom in selecting and pursuing problems.	2. Class is run as a "tight ship". The topics and activities are prescribed for the students and there is little deviation from the routine.
3. Major emphasis on ideas of merit and structure is used to enhance these ideas.	3. The major emphasis in productions is in correct usage, neat papers, proper spacing and punctuation, etc., rather than on concepts and ideas of merit.
4. Teacher's questions are open-ended, with an emphasis on generalization, analysis and synthesis.	4. The teacher's questions are primarily closed-type questions with an emphasis on specific facts and rote memory.
5. The interests and abilities of the students are utilized in planning and implementing curriculum materials.	5. The course of study is followed very closely, with little attention being paid to the interests of the children.
6. Discussion, utilizing debate and controversial issues, is freely used in the classroom.	6. The lessons are carefully structured and there is little room for debate and controversy.
7. Appropriately advanced content is available to the students so that there can be exploration in depth.	7. The content is based on specific facts and there are very few opportunities for exploration in depth or going beyond the grade level material.

Information taken from THE IMPROVEMENT OF TEACHING PROCEDURES WITH GIFTED ELEMENTARY AND SECONDARY SCHOOL STUDENTS, Project No. 6-1244, Ruth Martinson and Jean Weiner, Co-Directors, June 1968. p. 131.

Program Development

Summary of Two-Year Study*

Every human being is unique and constantly changing. Every child seemingly has potential talent of some degree and kind. Educators have been given the task of recognizing and then developing those traits and abilities that are unique within the individual so that the individual can utilize them for personal improvement and the benefit of others.

In pursuing this challenge the Kyrene School District, with the help of an ESEA Title III grant, sought to plan, develop, and implement an innovative program for talented and gifted children. This report summarizes the test results of the experimental program, involving 32 students in the pilot program and 29 students in the control group, for the years, 1974-76.

The program or project has been effective in fostering change in cognitive skills or performance levels in the areas of mathematics, reading recognition, reading comprehension, general information, composite achievement, vocabulary, and development of artistic ability.

The program or project has not been effective in fostering change in attitudes toward school nor in fostering change in participants' self-concept. These variables are seemingly stable variables and thus difficult to change or modify over a short period of time. Perhaps the time span of the project (meeting the equivalent of one day a week for 30 weeks or approximately 30 days total) was too short to realize a change in attitude toward school and self-concept.

During the first two years of this project, success was achieved in planning and developing procedures and instruments for identifying gifted and talented students. Also, an exemplar program and basic curriculum guidelines were formulated for the development of individual uniqueness in gifted and talented children. A great amount of work was accomplished toward the production of Unicornucopia: A Guidebook for Gifted and Talented.

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*See the Appendix for the full report.

Human Individual Potentialities
Third Year Report
1976-1977

The third year of the ESEA Title III Project at Kyrene School District had two main objectives.

The first objective states: to publish Unicornucopia, A Guidebook for Program Development For the Gifted and Talented, for statewide dissemination.

In pursuing this objective, concentration has been on expanding, revising, editing and preparing the final copy for publication. One thousand copies will be printed and distributed statewide, nationwide and internationally. Dissemination will also be achieved by submitting this same document to ERIC for abstracting, indexing and dissemination on microfiche.

The second objective states: to implement a field-tested model which may serve as a visitation and observation site for purposes of dissemination.

The project moved from planning and pilot study stages into full implementation the third year. Model modifications were made as recommended from the results of the pilot program of the second year.

The Kyrene School District has chosen to support gifted students by involving more than 10% of the student body in the HIP Seminar classes. Over 140 students were involved and more were served in a consultative model. Kyrene maintained two types of qualitatively different programs for its gifted population.

(1) The Kindergarten through sixth grade students were involved in a Seminar resource program. For the equivalent of one day's time, that is, one morning and one afternoon, the identified gifted child was pulled out of the regular classroom for groups which offered high-level and challenging learning activities. The student remained in the regular classroom for the other four days' time.

There were two thrusts in the Seminar classes for K - 6 children:
--Group study with high-level cognitive thinking, affective and psychomotor activities designed by the teacher;
--Flexible, yet structured, student-directed activities and independent study based on the creative and scientific method.

A seminar is defined as a group of students engaged in discussion and original research with the guidance of a leader.

(2) Seventh and eighth-grade identified students elected a variety of classes offered throughout the year for nine-week sessions. These classes were structured to allow the development of high-level cognitive thinking, to give the students the opportunity to relate with other gifted students, to discuss common problems, and to develop communication and leadership skills.

Classes offered were:

- HIP Seminar
- Communication and Games
- Communication and Leadership
- Creative Writing
- Acrylic Painting
- Spanish
- Anthropology
- Photography
- Electronics

Gifted education was viewed as one means of individualizing instruction.

As a result of intensive research, a pilot study, and a year of full implementation of a program for gifted and talented, we recommend the following pages for your consideration.

Recommended Phases of Program Development

In initiating any program, certain tasks best occur within a given timeline.

PHASE I

---Employ a coordinator.
---Appoint a Parent Advisory Committee and/or a Professional Steering Committee.
---Review literature, research and models.
---Develop philosophy, goals and objectives.
---Design program with differentiated content, technique and materials and learning environment.
---Publicize developing program regularly.
---Begin workshops and in-service meetings with administrators, teachers, and other school personnel.
---Identify teachers of talented and gifted.
---Design testing schedule and identify devices to be used.
---Begin weekly staff meetings.
---Mail parent and community nomination forms.
---Begin testing with paper and pencil measuring devices.
---Send gifted and talented teachers to national training sessions, conferences and visits to demonstration schools.
---Orient parents at local P.T.A. meetings.
---Collect and develop relevant curriculum materials.
---Plan pre- and post-evaluative materials for program.

Program Development (cont'd)

PHASE II

---Organize Community Resource Person Catalogue
---Designate resource centers at each school for weekly pull-out seminars
---Rank test scores for identifying gifted and talented.
---Continue regular public dissemination of information.
---Meet with teachers at each school to discuss who and why identification of each child. Discuss "CONCEPT, NOT TOTAL CONTENT" POLICY for gifted students.
---Meet with parents of identified children and others, as requested.
---Begin bi-weekly seminars or resource centers with children.
---Meet monthly with parents of the gifted and talented students.
---Continue testing new arrivals in the district.
---Send monthly newsletter to teachers and parents.
---Curriculum personnel and teachers of gifted and talented classes prepare written curriculum.

PHASE III

---Hire professionals to teach mini-units in the classrooms for identification and instruction of specific talents.
---Continue in-service meetings.
---Continue monthly parent meetings.
---Continue developing and organizing curriculum for the program.
---Begin consultative model with classroom teachers for in-class help with talented and gifted.
---Open a school curriculum center the gifted and talented.
---Begin kindergarten testing for identifying strengths and weaknesses.
---Start week-end and after-school clubs for gifted and talented.
---Begin a summer school designed for gifted and talented and other interested students.
---Continue evaluation and revision of entire program.

Developing a Program for Gifted and Talented

An Impossible Dream?

Establishment of an effective program for gifted and talented is a difficult task. Only very careful preparation, planning and foresight can assure the success of such a program. Administrators, teachers and parents can avoid the pitfalls in their path by careful study and planning. Only through familiarity with the fundamental arguments for special provisions for the gifted and talented and the best procedures for planning and implementing the program is one prepared for the unseen forces of resistance that arise. Desire and enthusiasm are not enough!

Psychological and sociological factors which have worked in favor of special programs for retarded and handicapped are not available to the gifted and talented---there is no built-in reservoir of compassion and sympathy. Instead, opposition will arise from surprising areas.

Opposition from Teachers

Without the enthusiastic support of teachers, no program for gifted and talented can succeed. Teachers may offer many reasons for opposing a program: that special treatment is unfair; it makes children conceited; puts too much pressure on children to succeed; or generates hostility between school and parents. Teachers who have no special background in working with gifted and talented have been found to be disinterested in these problems and outright hostile toward them. The Subcommittee on Education reports in Education of the Gifted hearings in 1972 that:

> *Teacher opposition can be overcome by a well-planned, smoothly functioning program; workshops, conferences and in-service days will help develop support from teachers who participate. Books and materials are necessary in professional libraries.*

Regular classroom teachers need encouragement from administrators to release the gifted child from unnecessary standard classroom requirements. The policy of having the child master the "concept--not total content" of material covered while the child is away from the classroom needs to be established with the support of the administrator.

Developing a Program (cont'd)

Even those who play no direct part in the program must understand it to interpret the program to parents. A teacher reporting, "I don't know what goes on in that room" can have a disastrous effect on even a structured pull-out program. To build a strong and enduring program, a solid foundation in teacher support and understanding must be laid.

Opposition from Parents and the Community

Parental and community resistance can kill any program,but a carefully planned program with teacher and administration support can survive despite community opposition.

Lack of knowledge is the source from which all resistance comes, so the school district must publicly inform the parents and community leaders. School personnel, teachers and administrators alike must make every effort to interpret the program to the parents and public and enlist their support. Without cultivation of parental and community support, a program is not likely to succeed.

Opposition from the Board of Education

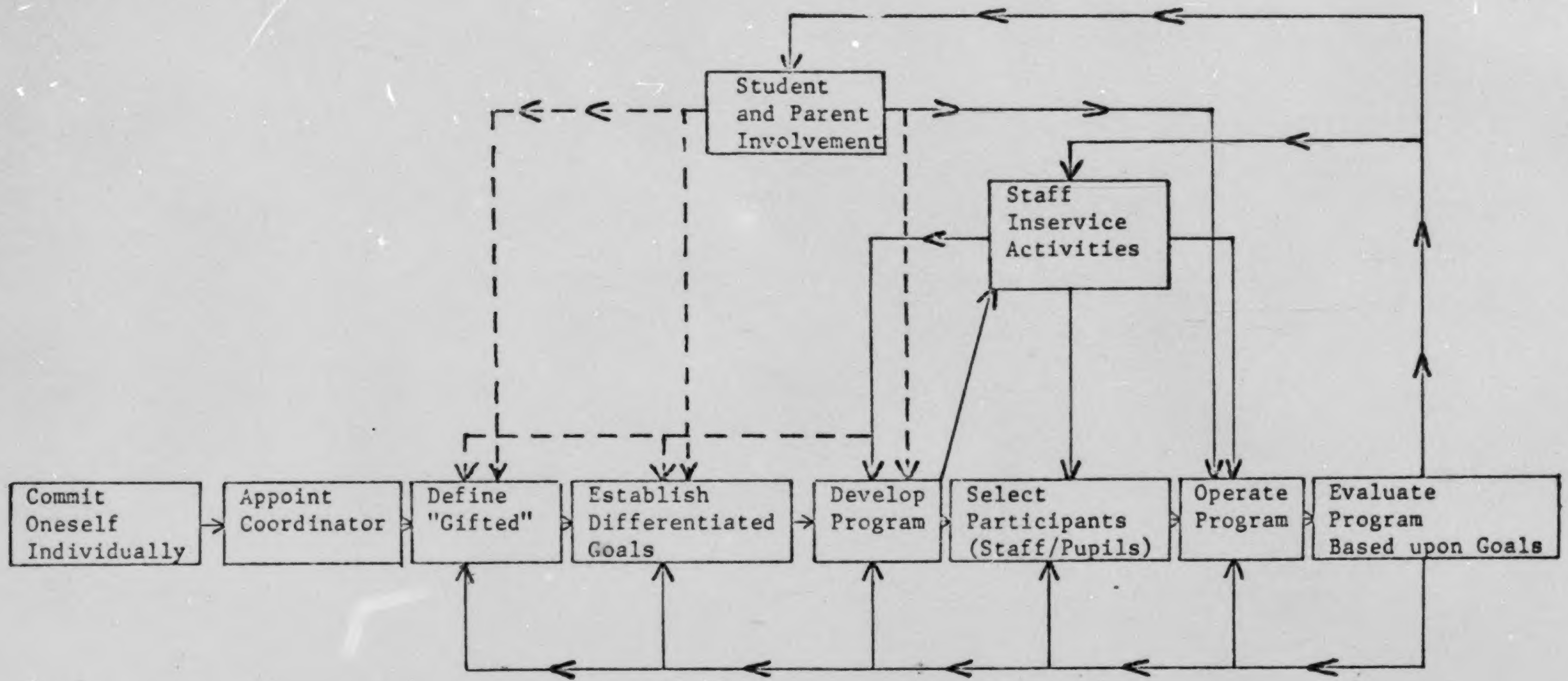
Before a school board can be expected to act in favor of a program for the gifted and talented, it is necessary that the case be artfully spelled out for them. As custodians of the scholastic dollar, they may view unexpected expenditures with alarm, but they, like other regulatory bodies, respond to need. Their policies reflect the needs and desires of the public they serve.

Opposition from Students

Lo, the grand paradox--children who have coasted through school year after year may suddenly rebel at more rigorous standards of a differentiated program. DO NOT overlook this potential problem. A well-planned program, of course, will mean more than just additional rigorous work. A climate where intrinsic satisfaction may exist for the student and extrinsic rewards be presented by the school will smooth this problem.

A RECOMMENDED PROCESS FOR SETTING UP PROGRAMS FOR THE GIFTED AND TALENTED*

Irving S. Sato, Director, National/State Leadership Training Institute on the Gifted and the Talented


Student and Parent Involvement
Staff Inservice Activities
Commit Oneself Individually
Appoint Coordinator
Define "Gifted"
Establish Differentiated Goals
Develop Program
Select Participants (Staff/Pupils)
Operate Program
Evaluate Program Based upon Goals

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* Based upon ideas from a chart by Dr. Robert Kelley, the University of the State of New York, Albany.

Guidelines for Success

No two communities are likely to develop precisely the same program for gifted and talented students. Communities differ in size, wealth, number of schools and students. A detailed plan of action must be followed by any school system. Below are suggestions for initial steps to be taken in planning for a successful program recommended by the Southern Regional Project for Education of Gifted (1972).

Recommendation #1: KNOW WHAT YOU ARE TALKING ABOUT

Be armed with facts that you can communicate to parents, teachers, school board members, and the public. Arguments against programs for the gifted and talented are superficial, but convincing--only reason and fact in quantity and quality can overcome such obstacles. In addition to knowing about the literature in the field, know the number of identified gifted and talented in your district and where they are, drop-out rate, how your system compares with others, state regulations and policies.

Recommendation #2: HIRE A CONSULTANT

A consultant can do an effective job of presenting the case for gifted and talented to parents, teachers, school boards and the public.

Recommendation #3: DEVELOP OBJECTIVES

The objectives for gifted and talented programs must dovetail with the general educational objectives of the school district. Spell them out clearly for they will later provide a basis for program evaluation.

Recommendation #4: DEVELOP A BASE OF SUPPORT

The greater the number of persons planning the program the greater its chance for success. Include teachers and all school personnel regardless of the role they will play in the program. Parents and other key community representatives must also be included, but less than genuine involvement can lead to a paper program with no substance.

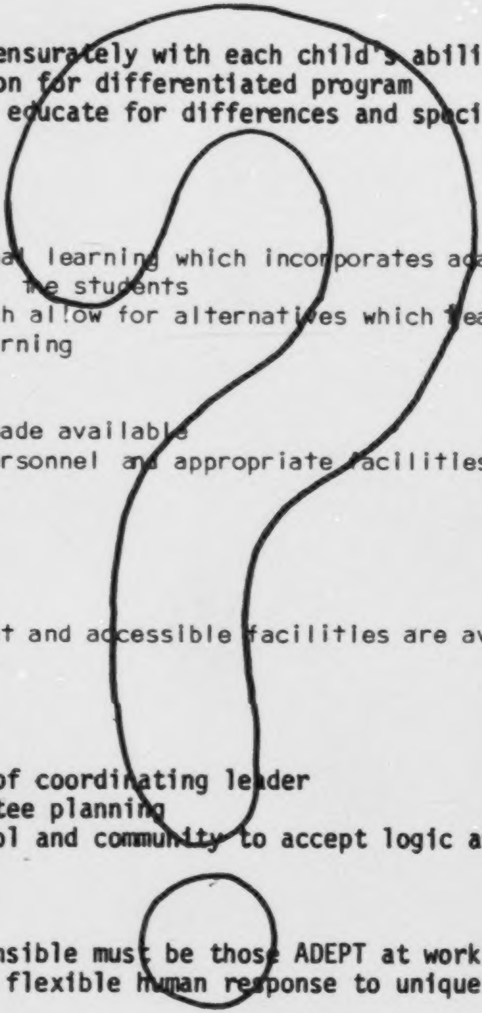
Recommendation #5: PICK ONE INDIVIDUAL TO HEAD THE PROGRAM

Responsibility for a program cannot be distributed among department heads, principals or other persons whose primary concern is for all the children in their jurisdiction. The program will falter, lag, and be unduly undermined if the overall developmental responsibility is not fixed in one individual.

Initiating a Program

The Five W's of Program Development

WHY	is a program necessary
WHAT	will the program provide
WHEN	will provisions for the program be made available
WHERE	will facilities be located
HOW	will these provisions be put into operation
WHO	will be responsible for implementing the provisions



--to educate commensurately with each child's ability to learn
--to explain reason for differentiated program
--to identify and educate for differences and special talents

--multi-dimensional learning which incorporates academic, psychological and social needs of the students
--procedures which allow for alternatives which teach development of independent learning

--when money is made available
--when trained personnel and appropriate facilities and materials are available

--where convenient and accessible facilities are available

--identification of coordinating leader
--steering committee planning
--ability of school and community to accept logic and objectives for the program

--personnel responsible must be those ADEPT at working with gifted
--able to provide flexible human response to unique behavioral and mental attitudes

TYPES OF PROGRAMS FOR GIFTED AND TALENTED

Many different types of programs have been developed to meet the needs of gifted and talented students. It is possible that no one type of program will be sufficient for all gifted students, nor meet the priorities and monetary resources of all schools. Different combinations are often used. Each school system must plan and implement the program and adaptations best suited to its own situation. Some basic approaches are:

I. Acceleration. The student moves through school at a faster rate, thus finishing at an earlier age. Students to be accelerated are selected carefully on individual basis by qualified personnel who evaluate emotional, social and academic ability.

A. Early admission to kindergarten or first grade for those who are qualified.

B. Skipping grades by eliminating one semester or one grade.

C. Telescoping grades allows the child to progress through the elementary curriculum at his own rate such as in an ungraded primary. At Junior or Senior High level the student may take a heavy class load, thereby completing two years work in one year.

D. Advanced Placement.
    1. testing out of classes.
    2. credit by examination.
    3. taking college courses while in high school.

E. Early College Entry (usual at age 15 or 16) is possible for those children who have finished high school early.

II. Enrichment. Enrichment broadens the curriculum. Enrichment may involve the use of specific materials, assignments, and pupil projects to meet identified needs of the student. Traditionally, the classroom teacher has been expected to give enrichment for gifted students in a heterogeneously grouped classroom.

III. Segregation. Segregation grouping brings brighter children together in order to give them the special education they need by creating special classes. "Clustering" all gifted children allows a specially trained teacher to provide special curriculum, environment, and activities. It gives opportunity for the interaction of more able students with other able students.

IV. Partial Segregation. Partial segregation is where one part of the day or week is spent with the regular class and the other part is spent in a special class or resource room. Currently, the more common practice is to "mainstream" the student 4/5 of the time in the regular class and "pull out" the student for special help 1/5 of the time.

1. Independent study allows a student to pursue topics of special interest more intensively than normally possible in a regular classroom. The teacher acts as a guide or facilitator to aid the student to connect with resource people or materials.

2. Seminars bring gifted students together to study in wide ranging areas and permits regular stimulating contact with others of high ability. Similar problems and concerns may be discussed.

V. Special Schools. Schools such as the Hunter College Elementary School where only gifted children are admitted is an example. They are usually grouped by chronological age. They work independently, and participate in unit topics and study groups.

VI. Special Summer Programs. Summer workshops, camps, and classes provide students with opportunities not normally offered in the regular classroom. Experts in various fields such as music, art, science, or leadership may design classes to broaden or to accelerate skills.

Program Description

We have incorporated many aspects of the preceding types of programs for gifted and talented.

Learners will be expected to work with facilitators in establishing self-initiated projects, either as individuals or in small groups. A variety of teaching methods and materials for individual students will be devised. Any necessary textbooks, reference books, tapes, independent study units, programmed texts, games, models, equipment, skill kits, and teaching machines which will enhance the program will be supplied. Moving from the traditional memorizing of facts to the creative relating of concepts, students' diversity and originality will be stressed, as learners:

---identify their own talents, interests, and notions;

---transform these into genuine purposes in various organizing centers which are broad enough to encourage cross-discipline exploration;

---establish a time-line for completion of their activities;

---develop self-evaluation designs with which to rate their own programs;

---develop skill to communicate and/or teach their conclusions to others.

Both formal and informal contact with the staff will occur with small or large group activity, one-to-one experience counseling sessions, mini-lectures, group seminars, conferences, role playing, demonstrations, and instruction which introduces various learning experiences.

The following sample teacher's schedule is suggested for a model for K - 6 grades.

HIP SEMINAR: SAMPLE TEACHER'S SCHEDULE

<table>
<tr><th>MONDAY</th><th>TUESDAY</th><th>WEDNESDAY</th><th>THURSDAY</th><th>FRIDAY</th></tr>
<tr><td>CYCLE II
Seminar
Grades 3-4</td><td>CYCLE I
Seminar
Grades 1-2</td><td>CYCLE III
Seminar
Grades 5-6</td><td>OBSERVATION
Special help
Demonstration Lessons
Visitation</td><td>HIP Staff Meeting
Group Planning</td></tr>
<tr><td colspan="5">(STUDENT ACTIVITY CENTER)</td></tr>
<tr><td>CYCLE III
Seminar
Grades 5-6</td><td>Observation
Special help
Demonstration Lessons
Visitation</td><td>CYCLE II
Seminar
Grades 3-4</td><td>CYCLE I
Seminar
Grades 1-2</td><td rowspan="2">Individual Planning,
Conferences</td></tr>
<tr><td>Consultation</td><td>Consultation</td><td>Consultation</td><td>Consultation</td></tr>
</table>

WEEKLY HIP LESSON PLAN OUTLINE

Teacher________________________________

Class______________Date________________

Social Effectiveness:

Humanities:

Intellectual Effectiveness:

Figural -

Symbolic -

Semantic -

Creativity:

Physical Effectiveness:

Independent Study:

This lesson plan outline is utilized by the HIP teacher as a guide in planning her activities for the week. These activities are devised from the units included in this guidebook as well as other activities which she feels will fit into the Guilford or Bloom models. None of these areas can actually be separated from the other, so a great deal of complimentation occurs.

HIP LESSON PLAN OUTLINE

Teacher____________________________Class______________Date____________________

SOCIAL EFFECTIVENESS:

(Social effectiveness refers to the affective -feeling- domain, valuing, inter-personal relationships, group dynamics, and discussion skills.)

HUMANITIES:

(Humanities refers to the basic qualities of being human. It is the beliefs, themes, styles reflected in literature, drama, and the fine arts.)

INTELLECTUAL EFFECTIVENESS:

(Intellectual effectiveness refers to the cognitive -thinking- domain. Recall, comprehension, application, analysis, synthesis and evaluation are thinking skills. These are approached through figural, symbolic and semantic content.)

CREATIVITY:

(Creativity refers to skill development in fluent, flexible, original and elaborative thinking. It also involves risk taking, complexity, curiosity and imagination.)

PSYCHOMOTOR:

(Psychomotor development requires active use of problem-solving skills in games such as Clue, Mastermind, Chess and Scrabble. General movement education such as art, drama, dance, and music develop kinesthetic, manipulative and mechanical skills.)

INDEPENDENT STUDY:

(Independent study refers to basic research and information-processing skills leading to the student pursuing self-chosen topics and interests.)

KYRENE SCHOOL DISTRICT #28
HUMAN INDIVIDUAL POTENTIALITIES
ESEA TITLE III

Student Self-Evaluation

NAME ______________________________ DATE ____________________

Listed below are some of the objectives developed in the HIP classes. Please check to evaluate yourself.

	Yes	Sometimes	No
Affective Domain (Feeling)			
1. More willing to contribute to discussions			
2. More willing to listen to other people's contributions to discussions			
3. Learning to respect other people's opinions			
4. Learning to accept constructive criticism			
5. Learning to work with others			
6. Learning to work independently			
7. Developing a wider range of interests			
8. Developing a better opinion of my abilities			
Cognitive Domain (Thinking)			
9. Able to think better			
10. Acquiring new ideas			
11. Developing a different point of view			
12. Developing more creativity			
13. Developing more skills in design and perspective (figural dimension)			
14. Developing more skills in math, logic, and spelling (symbolic dimension)			
15. Developing more skills in vocabulary and language meaning (semantic dimension)			
16. Developing skills in research			
17. Gaining more knowledge of the sciences: physical, biological, social			
18. Gaining more knowledge of the humanities: literature, art, drama, music			
19. Learning different approaches to solving problems			
20. Able to predict outcomes			
Psychomotor Domain (Doing)			
21. Learning to organize myself			
22. Able to initiate projects			
23. Developing better self-discipline			
24. Developing greater maturity			
25. Gaining skills in many games and activities			

Comments: ____

____

PROGRAM EVALUATION

HUMAN INDIVIDUAL POTENTIALITIES
KYRENE SCHOOL DISTRICT

End-of-Year Teacher Evaluation--May, 1977
(Parent)

NAME OF STUDENT(S)________________ GRADE____ SCHOOL________

It is time for the final evaluation of the year. Below are listed some of the objectives of our program.

Please indicate your ratings by circling an appropriate number. There are spaces for comments if you choose.

(1) Do you think the program for gifted and talented students is serving these students in its present form?
NO YES
1 2 3 4 5

(2) Do you think the children are benefiting from the HIP Program in the following areas?

	NO				YES
Social Effectiveness (affective or feeling)	1	2	3	4	5
Humanities (literature, etc.)	1	2	3	4	5
Intellectual Effectiveness (thinking)	1	2	3	4	5
Creativity (originality)	1	2	3	4	5
Skill Games (psychomotor - active)	1	2	3	4	5
Independent Study (Research skills)	1	2	3	4	5

(3) Do you feel that the students' participation in this program has made a significant change in their attitude toward school?
NO YES
1 2 3 4 5

(4) Do You feel that the students' participation in this program has made a significant change in their self-esteem?
NO YES
1 2 3 4 5

(5) Do you feel the program should be continued next year?
NO YES
1 2 3 4 5

(6) Please comment on how you feel the program might be improved:

(7) Please comment on the class/classes in which your students are involved:

Additional Comments________________

____
Parent or Teachers Name

Identification

Definition

The first necessary step in planning for a gifted and talented program is to define the term. This must be done at the local level, and definitions will reflect the philosophy of the district. The definition, as agreed upon by the U. S. Office of Education, provides general guidelines:

> *"Gifted and talented children are those identified by professionally qualified persons who, by virtue of outstanding abilities, are capable of high performance. These children who require differentiated educational programs and/or services beyond those normally provided by the regular school program in order to realize their contribution to self and society."*

Children capable of high performance include those with demonstrated achievement and/or potential ability in any of the following areas, singly or in combination:

1. General intellectual ability

Score 130 or over on an IQ test. Most special program prototypes, acceleration, enrichment, special classes are designed for this group. Some high IQ children do not do well in school and are labeled as underachievers.

2. Specific academic aptitude

Academic talent may be defined as testing in the top 95% or 9th stanine on achievement tests. This child may or may not have a high IQ score. He/she is highly prized in educational settings and, along with the high intellectual ability student, may be the honors student.

3. Creative or productive thinking

This talent area includes other productive groups and they may be identified in one of two ways:

(1) By scoring high on measures or by observations of creative performance, and,

(2) By those displaying creative abilities as witnessed by their productivity and those who are identified by professional judges to be inventive or innovative. Specific talents in this category range over an unusual spectrum from writers, artists, poets, to inventors, theorists and critics.

4. Leadership or psycho-social

Though there are few ways of measuring the ability to influence others, a leader in our midst seems to possess a capability for empathizing with others and anticipating their reactions, then behaving accordingly. Leadership ability may be a mode of expressing other talent. Check sheets completed by peers, parents and teachers may be used to identify this psycho-social ability.

5. Visual and performing arts

In this category are the complex talents of art, singing, music, dramatics, creative dance, which incorporate aesthetic values, motivations and talents. These abilities may be used to entertain, affect or influence vast audiences. Great latitude must be allowed in this area which incorporates diverse talents such as mime and choreography. Identification may be by professional judgment.

The State of Arizona has developed the following guidelines:

1. SPECIAL EDUCATION (ARS 15-1011)

'Special education' means the adjustment of the environmental factors, modification of school curricula and adaptation of teaching methods,materials, and techniques to provide educationally for those children who are gifted or handicapped to such an extent that they do not profit from the regular school curricula or need special education services in order to profit. Difficulty in writing, speaking or understanding the English language due to an environmental background, wherein a language other than English is spoken, primarily or exclusively, shall not be considered a sufficient handicap to require special education.

2. GIFTED (ARS - 15-1011)

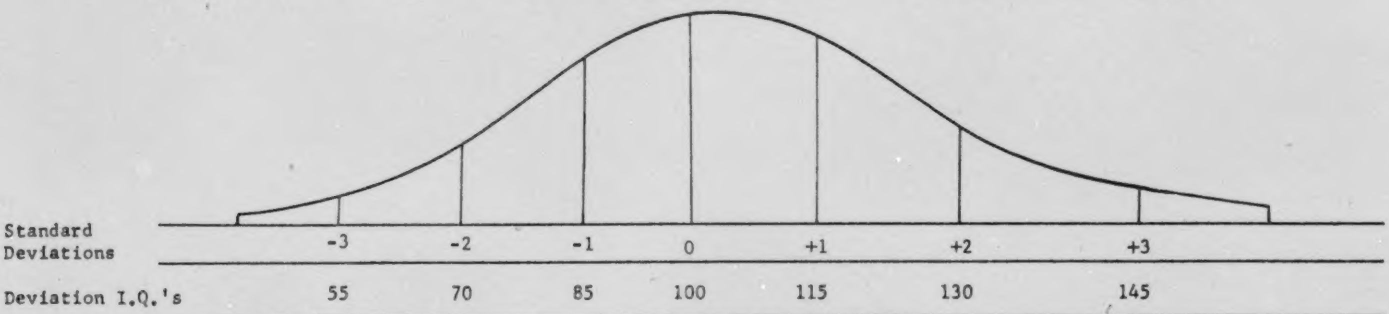
A gifted child (GFT) is a child of lawful school age who, due to superior intellect, advanced learning ability, or both, is not afforded an opportunity for otherwise attainable progress and development in the regular classroom instruction and who needs special instruction, special ancillary services, or both, to achieve at levels commensurate with his/her intellect and ability.

The Kyrene School District defines gifted and talented as children who excel markedly in ability to think, reason, judge, invent or create and who need special facilities and/or educational services in order to assist them to achieve more nearly their potentials for themselves, and for the increased contributions they may make to the community, state, and nation.

Ruth Strang says, "Democracy requires diversity rather than uniformity. Valuable individual differences need to be cultivated.... Few people object to making special provisions for the athlete or for the handicapped child. Gifted children may become handicapped if appropriate provision is not made for them."

The following chart by Josaph P. Rice, Ph.D., justifies a specialized educational program for those who intellectually deviate from the norm.

SUGGESTED CATEGORIES OF INTELLECTUAL DEVIATION BASED UPON THE STANDARD DEVIATION



Deviation Categories	Defective	Retardation	Learning Deficit	Low Normal	Average Learning Ability	High Normal	Able Learner	Gifted	Highly Gifted
Grouping Possibilities	Individual Custodial Care	Special Class	Homogeneous "Z" Group		Homogeneous "Y" Group	Homogeneous "X" Group		Special Class	Individual Instruction or Tutoring

Typical Special Learning Possibilities

Corrective Training

Special Subject Matter

Remedial Instruction

Regular Academic Program

Enrichment

Advanced Subject Content

Specialized Curriculum

Individual Program

From Homans, John, A TEXTBOOK OF SURGERY 6th Ed., 1945. Courtesy of Charles C. Thomas, Publisher, Springfield, Illinois.

Instruments Of Identification

The basic idea of screening is to use quick, simple procedures on large groups of people to sort out those apparently qualified for a special program from those who are not.

Our research project tested many complicated procedures in order to identify the most effective and consistent measures. As many as 42 variables were correlated.

We recommend the use of a multi-phasic approach using the Otis-Lennon Mental Ability Test for group achievement test scores, classroom teacher nomination, teacher check sheet, parent or community nomination, and the Cummings Curiosity Test. After the screening process is complete, an individual Stanford-Binet or WISC may be added to the data.

The standard "intelligence" tests hardly measure the variety of ways people think and certainly does not measure a complete "Intelligence Quotient."

Although test scores tend to be consistent, our research shows that some childrens' test scores varied more than 30 points from a Stanford-Binet to a WISC or WISC to Stanford-Binet. Several students increased or decreased their scores dramatically within a short or long range of time.

THEREFORE, ALL MEASURING DEVICES SHOULD BE CONSIDERED AS SCREENING DEVICES WHICH GIVE SOME INDICATION OF THE STUDENTS' ABILITY TO SOLVE THE PROBLEMS OF THAT PARTICULAR TEST ON THAT CERTAIN DAY WITH THE UNCERTAIN INTERNAL AND EXTERNAL MILIEU OF THE "TESTEE."

> *" I know I have some bright pupils, but how bright? Are they gifted?"*
>
> *-- A teacher*

Identification is a matter of selecting or devising systematic and objective means of recognizing the characteristics of gifted and talented children. Procedures used to identify the gifted vary according to the definition adopted, the size and location of the school district, staff available, and objectives of the proposed program. Nationwide, I.Q. seems to be mentioned as the most generally accepted single criteria for identification.

Instrumentsof Identification (cont'd)

Since identifying for various talents has become a concern, the trend appears to be to collect all the data possible on each child and to entrust a committee of school personnel and psychologists, as well as professionals in the talent areas, to select and place those considered qualified for participation in the program. This kind of selection technique, though basically very sound, is extremely difficult and time consuming.

Three aspects of the testing problems that one must keep in mind are:

(1) Group tests have not been designed to test the extremes.

(2) Economical use of psychological testing services can be aided by proper screening methods before individual testing is begun.

(3) Only a long range on-going commitment will serve the gifted.

Minimum essentials, as indicated by research, are necessary for any gifted and talented program. They are:

(1) Group intelligence tests. Group intelligence tests are helpful for screening purposes, but the younger the child the less acceptable group tests are for identification of the gifted and talented. Selection MUST not be based on a group intelligence score alone.

(2) Teacher judgment. There is a tendency for teachers to recognize as gifted and talented those who are attractive, well-behaved, ambitious and conformative. They may overlook the highly creative child who is perhaps unkempt, not ambitious nor academic, divergent and outspoken. Teacher referrals are valuable but they must be reinforced by other more objective measures.

(3) School records, achievement test scores and teacher grades. Selection of students on the basis of demonstrated potential is a predominant means of identifying talented and gifted BUT it is only one method! Care must be taken that despite unsatisfactory marks in these areas the highly gifted underachiever, whose needs are not met by a regular program, will not be excluded. Pupils with other indications of talent or giftedness MUST NOT be omitted from the program because of achievement, grades or school records and scores.

Instruments of Identification (cont'd)

(4) Individual intelligence tests. Administered by a qualified person, Intelligence Quotient is a valid basis for the identification process, but error in testing and areas of ability not measured by I.Q. tests preclude the use of this method alone. Whenever possible, individual tests should be used to check the accuracy of group tests.

(5) Parent nomination or interview. Parents often discover a child's giftedness early in the child's life. They are often better identifiers of giftedness than teachers. They n nominate a child they think is gifted and supply valuable information on the history of the younger child.

(6) Pupil ambition and drive. Some programs allow students to refer themselves, then withdraw if they cannot keep up. With ambition and determination some students are able to go beyond what we perceive to be their boundaries. Each school must resolve this problem for themselves and districts usually insist upon more than one area of ability for program inclusion unless it is academic or I.Q. Remember, however, there is no such thing as an over-achiever. If a child can achieve something, he is able to do it NO MATTER what his/her test score may say.

(7) Early identification. As difficult as early identification is, an early determination of a pupil's real abilities has advantages for everyone. If pre-kindergarten testing occurs, the child will be challenged/encouraged to do his best from the beginning of his/her school experience. Great harm is done when gifted children must wait until high school or later to have their unique abilities recognized. Apathy, non-productiveness and even dropping-out often occur. Hal Lyons reports that one Washington, D.C. district had 37% of its highly gifted students drop out of high school. Usually it is thought that 13% to 17% of the general drop-out population is highly gifted.

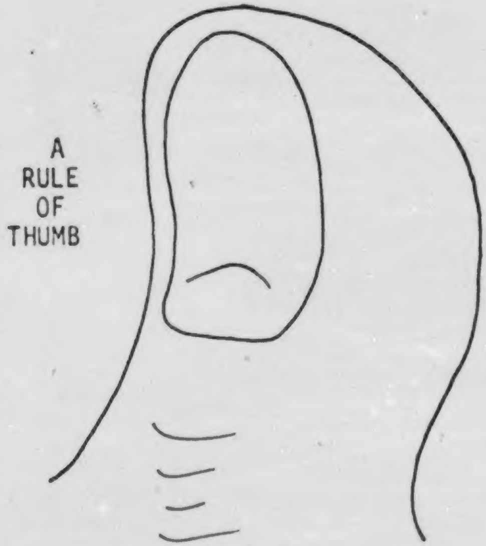
Hindrances To Appraisal

In the classroom atmosphere, it is difficult to identify either the highly gifted or talented. Bright students are not all angels---some deliberately hide themselves in the crowd so they will not be thought of as "different." Often they are bored and make trouble, and have acquired bad work habits and attitudes.

(1) Avoid rigid cut-off points since no measuring device is reliable enough to warrant such rigidity. Even an individual I.Q. test has a margin of error of 10 to 15 points. Do not emphasize exact scores.

(2) Take care in classifying the student who has strong motivation to achieve to please his parental goals. This child may score in the 9th stanine in more than one area but dislike experiences in the gifted and talented class.

(3) Establish procedures to guard against exclusion of cultural minorities. Expression of intelligence in these children is often blocked by:
---environmental influences, and lack of other cultural differences and conflicts.
---strong emotional insecurity resulting from cultural differences and conflicts, both at school and at home;
---few developmental opportunities in the home and community.



A RULE OF THUMB COMMONLY USED IN PROGRAMS FOR THE GIFTED AND TALENTED IS TO GIVE THE CULTURALLY DIFFERENT CHILD A BREAK. TACK THE TEN POINT MARGIN OF POSSIBLE TEST ERROR ONTO HIS SCORE---

THEN THE MORE ABLE WILL QUALIFY FOR THE PROGRAM!

If a culturally different child has an IQ of
122
+ 10 point margin of possible testing error

132 VOILA! He now qualifies for the program!

KYRENE SCHOOL DISTRICT
ESEA TITLE III
HUMAN INDIVIDUAL POTENTIALITIES

Check Sheet for Identification of Learning, Motivational, Creativity and Leadership Characteristics of Students

STUDENT'S NAME________________________ DATE____________

SCHOOL____________________ GRADE____________ ROOM________

Dear Parents,

We need your help! We are trying to identify different talents in students which do not show up on tests. The following list will give us direct information about the talents and abilities of each child. Please check any item that describes your child and double check those which are most applicable. Any additional comments should be written on the back. PLEASE COMPLETE THESE FORMS AND MAIL THEM TO THE SCHOOL OFFICE AS SOON AS POSSIBLE. Thank you!

I. LEARNING CHARACTERISTICS

1. An avid reader.
2. Uses advanced vocabulary.
3. Has great storehouse of information.
4. Keen observer, gets more from story, film, etc., than others do.
5. Quickly masters and recalls facts.
6. Sees relationship among unrelated ideas.
7. Has wide range of interests.
8. Reasons things out for self, sees common sense answers.
9. Understands similarities or differences in events, people, things.
10. Rapid insight into how and why relationships.

(Adapted, and compiled from Renzulli and Cummings check sheets. Used with permission by William B. Cummings, Programs for Mentally Gifted Minors, San Francisco Unified School District)

II MOTIVATIONAL

11. Easily bored by routine tasks.
12. Once interested in a project does not want to stop.
13. Critical of self; not satisfied with own speed or products.
14. Works independently.
15. Interested in "adult" problems such as religion, politics, race, sex.
16. Stubborn in belief.
17. Concerned with right and wrong---judges others.
18. Venturesome, anxious to do new things.
19. Needs little outside control---disciplines self.
20. Has unusual number of interests that keep child busy.

III CREATIVITY

21. Very inquisitive, curious.
22. Openly states own opinion.
23. Keen sense of humor, finds humor where others won't see it.
24. Is non-conforming, does not fear being different.
25. Accepts disorder
26. Tells imaginative stories.
27. Sensitive to beauty and aesthetic characteristics of things.
28. Uses colorful verbal expressions.
29. Solves problems by a variety of unique ways, is innovative.
30. Intellectually playful, fantasizes.
31. Is a high risk taker--adventurous and speculative.
32. Interrupts while others are talking.
33. Is excited about own discoveries.
34. More interested in overall picture than details.
35. Criticizes constructively.
36. Frank Appraisal of adults.
37. If boy, intense interest in artistic activity such as drawing, singing, dancing, writing, and playing an instrument.
    If girl, greater amount of independence.
38. Can show relationships among seemingly unrelated ideas.
39. Individualistic---likes to work by self.

IV LEADERSHIP

40. Cooperates with others.
41. Is responsible--does what has promised and does it well.
42. Is self confident with peers and adults.
43. Seems to be well-liked by classmates.
44. Expresses self well.
45. Adapts readily to new situations---is flexible.
46. Enjoys being with others.
47. Organizes and directs activity in which he is involved.
48. Is sensitive to others and to situations.
49. Is well coordinated and enjoys all sorts of athletic games.
50. Participates in most of the school activities.

PROCEDURES FOR PLACEMENT OF STUDENTS

HUMAN INDIVIDUAL POTENTIALITIES PROGRAM

The law requires a re-evaluation of students each year for placement in special education programs such as the HIP program.

The first process is testing. Screening measures are used to sort out those who apparently qualify for a special program from those who don't. The criteria for the HIP program are:

1. General intellectual ability-I.Q. 130 or above based on an individualized testing program;
2. Specific academic aptitude, 95 percentile or above, on standardized achievement tests in one or more subject areas;
3. Creative or productive performance.

The second process of selection comes after the student is found to qualify on the basis of the above criteria. The selection is made by the multi-discipline selection committee.

Anyone may nominate a student to participate in the HIP program but the Federal and State law requires a multi-disciplinary staffing for placement. In other words, many people must be involved in the final decision of whether to place the student in the program. The selection committee includes the parents, the classroom teacher, the seminar teacher, the principal, the psychologist and consultant for HIP. All may have information which will contribute to the decision of placement in HIP or not, but a majority or more will make the decision of how the child's needs will best be served.

Basically, the spring of the year will be the time for testing, screening, nominations and collection of data.

Evaluation of data will take place during the summer and placement in the program will take place during August as a result of mini-conferences involving:

1. the HIP staff (Seminar teacher and psychologist/consultant)
2. the classroom teacher
3. the school principal
4. and the parents.

Parents will be notified of recommendation in August and invited to orientation meetings. Parents have the right to withhold or withdraw consent for this placement. They have the right to review the results of the evaluation and to obtain independent evaluation at their own expense.

Termination from the program is processed through the multi-discipline selection committee.

KYRENE SCHOOL DISTRICT
Human Individual Potentialities
(Gifted and Talented Program)

NOMINATION FORM

Initiated by ______________________________ Date ____________

Student's Name ______________________________ Age ____ Grade ________

School ______________________________ Teacher ______________________

Please check the area(s) of special ability for which the student is being nominated.

____ A. General Intellectual. This area roughly corresponds to I.Q. Score. Ability to perform in all academic areas.
____ B. Specific Academic. An aptitude in a specific subject area such as language arts, math or science.
____ C. Creative Thinking. The ability to do divergent thinking resulting in unconventional responses to conventional tasks.
____ D. Leadership. The ability to assume leadership roles and have that leadership accepted by others.
____ E. Visual and Performing Arts. Ability in graphic arts, sculpture, music, drama or dance.
____ F. Psychomotor. Mechanical skills or superior athletic ability.

Give further evidence of special ability such as I.Q. score, achievement level, (sten score), etc.

____

____

____

NOMINATING COMMITTEE:

Classroom teacher ____________________ (date)

HIP Seminar Teacher ____________________ (date)

Principal ____________________ (date)

HIP Consultant/Psychologist ____________________ (date)

I give my permission for my child to be tested for, and, if found eligible, to participate in the Kyrene Gifted and Talented Program. I understand that I have the right to obtain an independent evaluation at my own expense, that I have the right to review the results of this evaluation, and that I may withhold or withdraw my consent for this placement.

____
Parent/Guardian Date

Student placed in HIP Program

____
Signature of Coordinator Date

KYRENE SCHOOL DISTRICT
ESEA TITLE III
HUMAN INDIVIDUAL POTENTIALITIES

Teacher Nomination Form

NAME______________________________SCHOOL________________________

DATE______________________GRADE______________ROOM______________

INSTRUCTIONS: List below any students you would identify as showing "consistently remarkable performance" in any of the following areas:

NAME OF STUDENT	General Intellectual Ability	Specific Academic Aptitude	Creative or Productive Thinking	Leadership Ability	Ability in Visual & performing Arts	Psychomotor Ability

---

KINDERGARTEN/1ST GRADE CHECKLIST

1. County______________________ 3. School __________________

2. District______________________ 4. Teacher__________________

When compared with other children in the kindergarten, which of your pupils possess,. to a marked degree, some of the following characteristics? Be particularly observant of the youngest children in the class. Do not exclude any child because of a speech defect.

1. Has unusually good vocabulary
2. Has ideas which are often very original in one or more areas (i.e., block play, free activities, art, rhythms, sharing)
3. Is alert, keenly observant; responds quickly
4. Has an usually good memory
5. Has a long attention span
6. Recognizes, on his own, some words in books on the browsing table
7. Uses longer sentences
8. Reasons things out, thinks clearly, recognizes relationships comprehends meanings
9. Is curious about many activities and places outside immediate environment and/or experience
10. Is a leader in several kinds of activities. Is able to influence others to work toward desirable goals
11. Has outstanding talent in a special area (s) such as art, music, rhythms, dramatics (indicate area(s) of talent)

If you have any pupils who exhibit at least three of the above characteristics, please list their names below. Following each name list the number of all characteristics that fit the pupil:

Pupil's Name	Characteristics (indicate by number)
1.____________________	____________________
2.____________________	____________________
3.____________________	____________________
4.____________________	____________________
5.____________________	____________________
6.____________________	____________________

Comments:____

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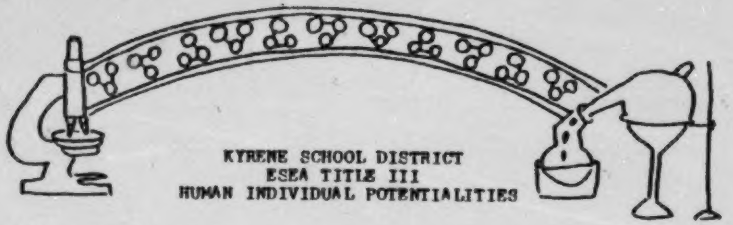


KYRENE SCHOOL DISTRICT
ESEA TITLE III
HUMAN INDIVIDUAL POTENTIALITIES

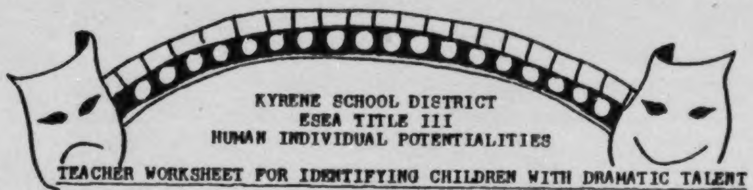
TEACHER WORKSHEET FOR IDENTIFYING SCIENTIFIC TALENT

If a child can be described by all or part of any of the following statements, put the number of each characteristic which applies to him after his name.

1. Is clear and accurate in oral and written expression.
2. Reads above grade level materials.
3. Performs arithmetical operations above grade level.
4. Has good coordination.
5. Does more than the assignment.
6. Rises above the failures met in experimenting or making projects.
7. Wants to know the reasons and causes for things.
8. Engages in his own special projects, spending much time and effort.
9. Reads much scientific material.
10. Appears to enjoy discussing scientific topics.

TEACHER____________________ SCHOOL__________ DATE__________

Pupil's Name	No. of Characteristics	Remarks

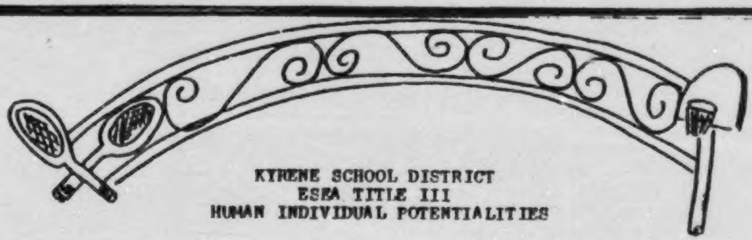


KYRENE SCHOOL DISTRICT
ESEA TITLE III
HUMAN INDIVIDUAL POTENTIALITIES

TEACHER WORKSHEET FOR IDENTIFYING CHILDREN WITH DRAMATIC TALENT

If a child can be described by all or part of any of the following statement put the number of each characteristic which applies to him/her after his/her name.

1. Readily shifts into the role of another character, animal or object.
2. Shows interest in dramatic activites.
3. Uses voice to reflect changes of idea and mood.
4. Understands and portrays the conflict in the situation, when given the opportunity to act out a dramatic event.
5. Communicates feelings by means of facial expression, gestures, and bodily movements.
6. Enjoys evoking emotional responses from listeners.
7. Shows unusual ability to dramatize feelings and experience.
8. Moves a dramatic situation to a climax and brings it to a well-timed conclusion when telling a story.
9. Gets a good deal of satisfaction and happiness from play-acting or dramatizing
10. Writes original plays or makes up plays from storie
11. Can imitate others; mimics people and animals.



KYRENE SCHOOL DISTRICT
ESEA TITLE III
HUMAN INDIVIDUAL POTENTIALITIES

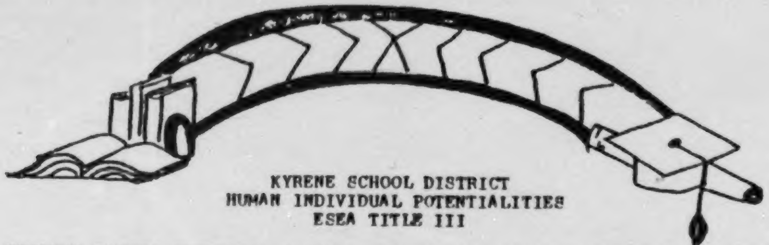
TEACHER WORKSHEET FOR IDENTIFYING CHILDREN WITH PSYCHOMOTOR TALENT

If a child can be described by all or part of any of the following statement put the number of each characteristic which applies to him after his name.

1. Is energetic and seems to need considerable exercise to stay happy.
2. Enjoys participating in highly competitive games.
3. Is consistently outstanding in many kinds of competitive games.
4. Is one of the fastest runners in the class.
5. Is one of the best coordinated children in the class.
6. Likes outdoor sports, hiking, camping.
7. Is willing to spend much time practicing physical activities such as shooting baskets, playing tennis, passing a ball.

TEACHER____________________ SCHOOL__________ DATE__________

Pupil's Name	No. of Characteristics	Remarks



KYRENE SCHOOL DISTRICT
HUMAN INDIVIDUAL POTENTIALITIES
ESEA TITLE III

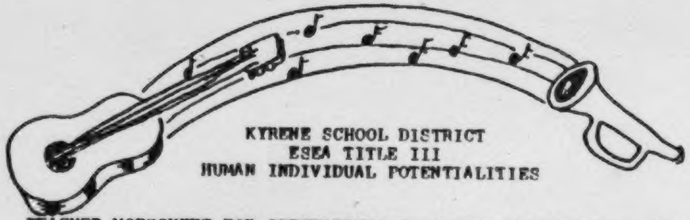
TEACHER RATING SHEET FOR IDENTIFYING CHILDREN WITH INTELLECTUAL TALENT

a child can be described by all or part of any of the following statements, t the number of each characteristic which applies to him/her after his/her me.

Learns quickly and easily.
Uses common sense.
Comprehends meanings easily, thinks clearly, sees relationships.
Retains well.
Has knowledge about and an interest in a variety of things.
Uses a large vocabulary effectively.
7. Reads books above grade level.
8. Can do difficult mental tasks.
9. Shows an interest in a wide range of things, asks intelligent questions.
10. Does some above grade level work.
11. Uses good and sometimes unusual methods of work.
12. Is very observant, alert, responds readily.

ACHER____________________ SCHOOL______________ DATE____________

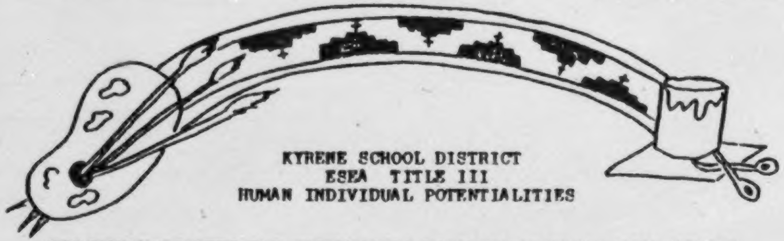
Pupil's Name	No. of Characteristics	Remarks



KYRENE SCHOOL DISTRICT
ESEA TITLE III
HUMAN INDIVIDUAL POTENTIALITIES

TEACHER WORKSHEET FOR IDENTIFYING CHILDREN TALENTED IN MUSIC

1. Has good coordination.
2. Has a good sense of rhythm.
3. Has excellent discrimination.
4. Understands musical symbols and relationships vividly.
5. Shows enjoyment of musical activities.
6. Performs with musical feeling.
7. Has a degree of tonal memory.
8. Responds readily to rhythm, melody, and harmony.
9. Plays one or more musical instruments well and/or sings well.
10. Makes up original tunes.



KYRENE SCHOOL DISTRICT
ESEA TITLE III
HUMAN INDIVIDUAL POTENTIALITIES

TEACHER WORKSHEET FOR IDENTIFYING CHILDREN WITH ARTISTIC TALENT

If a child can be described by all or part of any of the following statements, put the number of each characteristic which applies to him/her after his/her name.

1. Draws variety of things (not just jets or horses or people.)
2. Puts depth into pictures, plans pictures, and uses good proportion.
3. Takes art work seriously. Seems to find much satisfaction in it.
4. Shows originality. Draws things in ways no other children do.
5. Is willing to try out new materials and experiences.
6. Fills extra time with drawing and painting activities.
7. Uses art to express his own experiences, his own feelings.
8. Is interested in other people's art work. Can appreciate, criticize, and learn from other's work.
9. Likes to model with clay, carve soap, or work with other forms of three-dimensional art.

TEACHER____________________ SCHOOL____________ DATE____________

Pupil's Name	No. of Characteristics	Remarks

KYRENE SCHOOL DISTRICT
HUMAN INDIVIDUAL POTENTIALITIES

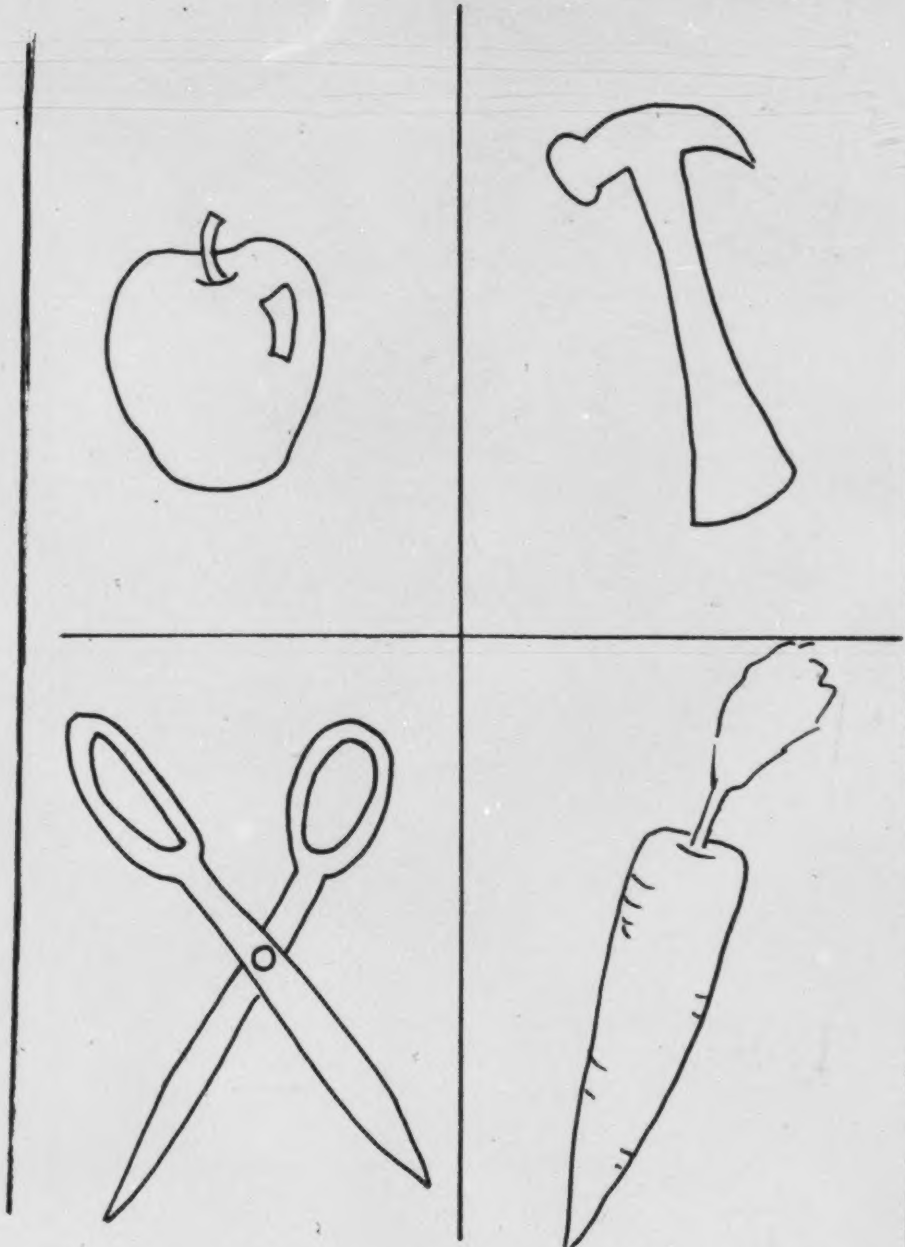
CUMMINGS
CURIOSITY TEST

Directions

This is an experiment to see just how far you can stretch your imagination. Will you please put your grade and age as well as your full name at the top of the first page. I am going to show you a picture. Will you write as many questions as you can think of about what you see in the picture. You need not make complete sentences. For example, the question, "Rhinoceros?" (Write on board.) would be perfectly acceptable if that is what you think is in the picture. You will have 15 minutes in which to "think up" as many different questions as you possible can. If you feel you have "run dry" and cannot possibly come up with a new question before time is called, you may turn in your paper and ___(read)_________. All right, (show picture) you may begin--write as many questions as you can about what you see pictured here.

(Pupils should be supplied with at least three blank pages of lined paper.)

Reproduced by permission of Susan N. Cummings, Ph.D. from her dissertation: Curiosity as a Measure of Cortical Potential. Arizona State University 1967.



Show one of the above pictures

BOARD OF TRUSTEES
Dwayne R. Awerkamp, President
Doyle L. Royer, Clerk
Ruben V. Hernandez, Member
Bill M. Owens, Member
Stephen T. Crankston, Member

KYRENE SCHOOL DISTRICT 28
8700 SOUTH KYRENE ROAD
TEMPE, ARIZONA 85284

SUPERINTENDENT
Ben Furlong, Ed. D.

EXCHANGE OF CONFIDENTIAL INFORMATION

____
Date

I hereby authorize the exchange of confidential information concerning my child ______________________________ (Child's name) __________________________ (Birthdate), between Kyrene Elementary School District #28, HIP Gifted and Talented, 8700 S. Kyrene Road, Tempe, Arizona and ____. It is understood that such information will be used in a professional manner.

____
Signature of Parent or Guardian

______________________________ ____________________
Witness Date

BOARD OF TRUSTEES
Dwayne R. Awerkamp, President
Doyle L. Royer, Clerk
Ruben V. Hernandez, Member
Bill M. Owens, Member
Stephen T. Crankston, Member

KYRENE SCHOOL DISTRICT 28
8700 SOUTH KYRENE ROAD
TEMPE, ARIZONA 85284

SUPERINTENDENT
Ben Furlong, Ed. D.

CONFIRMATION

(Parents name & address)

This letter is to confirm ____(Name of Student)________________ placement in the Kyrene School District Human Individual Potentialities: A Program for the Talented and Gifted.

We are pleased he/she is able to participate and look forward to a year of innovative learning experiences.

We encourage you to visit the seminar class and to request individual conferences with the teacher or psychologist.

Sincerely yours,

Joyce B. Maughan, Consultant
ESEA Title III Project for
Human Individual Potentialities

JBM:ec

KYRENE SCHOOL DISTRICT
HUMAN INDIVIDUAL POTENTIALITIES

PARENTAL CONSENT FORM
(Extended Field Trip)

I hereby give permission for my child, or ward, ______________________
(childs name)

to go to ____

via bus. I understand that my child, or ward will:

Leave from ______________________________________
(place) (date) (time)

Return to ______________________________________
(place) (date) (time)

In granting this permission, I assume full responsibility for any damage to person or property caused by my child or ward. Further, I hereby expressly waive any claim for liability against the Board of Education, Kyrene Public Schools, including its employees and representatives, and relieve them from all liability in connection with this trip. I further expressly agree that in the event of disciplinary action, or of illness or accident of my child or ward, he may be returned home at my expense. I further consent and will be responsible for any medical or dental treatment caused by my child or ward which may be advisable at the discretion of any physician or dentist. It is further warranted that if this Consent Form is signed by one of two parents or guardians, it is with the authority of the other.

______________________ ______________________
(Date of Signature) (Signature of Parent Or Guardian)

______________________ ______________________
(Telephone number) (Address)

PERMISSION FORM

I give my permission for ______________________ to participate in the Kyrene District HIP gifted and talented Program. I am aware this will involve a program of development which is based on the affective, cognitive and psychomotor domains. I give permission for the above student to be tested in order to determine the effectiveness of the program with the assurance that all effort will be made to protect the privacy of the student.

Please feel free to visit HIP classes and to contact the teacher for conferences.

Date______________ ______________________
Parent or Guardian

Personnel

Overview

The teacher is the key to an effective program for gifted and talented. Many studies make it clear--a comprehensive in-service preparation for all school personnel who either are in contact with or affect the gifted is desirable.

The essence of the teacher for the gifted and talented is one who can relate well with children on a personal basis, one who enjoys teaching gifted children, has a sense of humor, is flexible, highly creative, highly intelligent, intellectually secure, personally secure, interested in learning, mature and interested in the arts, literature and culture.

The effective teacher is not merely interested in the talent or achievement or intellectual power of the child--rather they are interested in the individual as a whole.

> *"It must be remembered that the purpose of education is not to fill the minds of students with facts, it is not to reform them, or amuse them, or to make them expert technicians in any field. It is to teach them to think, if that is possible, and always to think for themselves."*
>
> *Robert Hutchins*

> *"Democracy requires diversity rather than uniformity. Valuable individual differences need to be cultivated... Few people object to making special provisions for the athlete, or for the handicapped child. Gifted children may become handicapped if appropriate provision is not made for them."*
>
> *Ruth Strang*
> *Educator*

SCHOOL DISTRICT ROLES AND RESPONSIBILITIES

SCHOOL DISTRICT	COORDINATOR	TEACHER	STUDENT	PRINCIPAL
- Work cooperatively with county and State agencies. - Acquire and disseminate extensive background on the needs of the gifted and talented. - Develop appropriate identification and program development procedures. - Plan modifications of the current program. - Evolve program development and evaluation models. - Actively support the gifted program with needed materials, adequate facilities, sufficient freedom for teachers, expert resource and consultant help, and democratic administrative guidance.	-Design, develop, coordinate, and evaluate the program. -Develop and implement curriculum (techniques, materials) related to enriching the total program. -Prepare financial, statistical,and descriptive reports as needed to develop, maintain, and account for the program. -Coordinate identification and certification procedures. -Serve as a consultant and resource to the staff, students,and parents involved with the program. -Participate as part of the Educational Services staff. -Promote public relations activities at the local, county, and State levels.	-Provide an enriched individualized program for the gifted. -Assist students in planning, organizing, and evaluating tasks. -Screen, develop, and provide appropriate materials for the gifted. -Evaluate pupil progress. -Interpret the program to parents. -Support classroom teachers and building principals in their teaching relationships with the gifted and talented. -Provide an enriched extension of the regular curriculum for gifted students in intra- or extra-classroom settings. -Demonstrate diverse methods of instruction appropriate for the gifted, such as problem solving, independent study, etc.	-Attend regular or specially scheduled programs or events. -Complete selected tasks. -Communicate and share learning experiences with peers, teachers, and parents. -Practice decision-making skills. -Develop self-awareness and understanding. -Participate in planning and evaluating learning experiences within the program.	-Become knowledgeable about the unique needs of the gifted. -Become acquainted with gifted students in the school. -Stimulate interest in and concern for the gifted. -Urge teachers to provide qualitatively-differentiated programs for the gifted in their classrooms. -Cooperate with district personnel in identifying the gifted and implementing programs for them. -Encourage and assist teachers in securing appropriate instructional materials for the gifted. -Meet regularly with parents to explain the program to them. -Work cooperatively with other personnel in objectively evaluating the program.

From: Providing Programs for the Gifted and Talented
By Sandra N. Kaplan.

B DESCRIPTION

TLE: Coordinator for Gifted and Talented Program

ALIFICATIONS:
1. A master's degree, with academic training in gifted education
2. Valid certification as a school administrator or supervisor
3. A combination of at least 3 years educational experience as an administrator or classroom teacher
4. Above average intelligence
5. Such alternatives to the above qualifications as the Board of Trustees may find appropriate and acceptable

PORTS TO: Superintendent

PERVISES: Gifted and Talented staff and coordinates with principals the supervision of the HIP program

B GOAL: To enable identified individual students to utilize the educational services to the fullest by developing and supporting programs that enhance human individual potentialities to learn or develop intellectually, socially, and emotionally

RFORMANCE RESPONSIBILITIES:

To coordinate the development and implementation of a program for identified gifted and talented students

To coordinate with principals to implement curriculum and program planning and in-service training for teachers of gifted

To assist in recruitment, selection, and recommendation for hiring of any personnel

To conduct weekly staff meetings

To plan and guide Professional Steering Committee meeting

To provide and give in-service workshops for staff

To develop program calendar

To furnish quarterly progress reports to School District and to supervise the writing and dissemination of a monthly news-letter to parents and school personnel

9. To interpret the objectives and programs of the education services to the Board, the Administration, Parent Advisory Council, educational institutions, and the public at large

10. To maintain a permanent inventory of equipment purchased for gifted education

11. To establish procedures to identify, process, and place eligible pupils in gifted and talented classes

12. To notify parents of identified participants and to be available for parent conferences

13. To conduct parent orientation sessions for participants.

14. To conduct student orientation meetings

15. To schedule parent/teacher conferences

16. To plan and conduct monthly parent meetings

17. To evaluate, on an on-going basis, the total program, curriculum, procedures, and individual students' needs and achievements

18. To participate as a member of the evaluation team in the selection and placement of students in the gifted program

19. To maintain a professional standard of strict confidentiality in regard to private information received, shared, discussed, and learned about individual students and families

20. To select and request needed supplies, materials, and equipment to assure completion of established goals and objectives

21. To assume responsibility for compiling, maintaining, and filing all reports and records legally required or administravely useful

22. To assume responsibility for own professional growth and development; for keeping current with the literature, new research findings, and improved techniques; and for attending appropriate professional meetings and conventions.

TERMS OF EMPLOYMENT: 11 months

EVALUATION: Performance of this job will be evaluated annually in accordance with provisions of Board Policy on Evaluation of Administrative Personnel.

JOB DESCRIPTION

TITLE: Psychometrist for Gifted and Talented Program

QUALIFICATIONS: A master's degree plus additional training necessary to meet district, and state requirements for psychometrist

REPORTS TO: Project coordinator

JOB GOAL: To aid in program evaluation and in identification, placement, and termination of students in the gifted and talented program through a program of psychological testing.

PERFORMANCE RESPONSIBILITIES:

1. To identify all types of gifted and talented children
2. To assess differences of students in the program through testing
3. To recommend creative procedures when seen necessary
4. To maintain records on all referred students
5. To prepare and submit required scores and evaluations
6. To explain testing program procedures and limitations
7. To interpret the results when necessary
8. To conduct parent conferences with all who request such interviews
9. To interpret testing program

TITLE: Psychologist

QUALIFICATIONS:
1. A master's degree plus two or more years additional graduate work in education and psychology
2. A valid certificate to practice as a school psychologist
3. At least three years' teaching experience
4. Such alternatives to the above qualifications as the Board may find appropriate and acceptable.

REPORTS TO: Project coordinator

SUPERVISES: Psychological intern

JOB GOALS: To enable students to derive the fullest possible educational experience from school by promoting their sense of self and by treating any psychological or mental health problems. To conduct necessary testing to meet district, state, and federal requirements and for program evaluation.

PERFORMANCE RESPONSIBILITIES:

1. Conducts extensive screening examinations of all students in the school district
2. Assessess strengths and weaknesses of students in gifted and talented program and makes recommendations
3. Interprets testing program to school personnel, other concerned professionals, parents, and students when necessary
4. Makes recommendations on placement of students in the program and for termination
5. Conducts individual and group pre and post-tests for program evaluator and experimental research
6. Maintains records on all students in the district
7. Participates in placement staffings when referred students are involved, or as requested
8. Serves as a resource person concerning psychological development for teachers and other school personnel
9. Confers with teachers and parents whenever necessary
10. Participates in and/or leads inservice training programs, i.e., professional conferences and workshops
11. Attends scheduled staff meetings and committee meetings as needed
12. Keeps abreast of new developments in the field
13. Conducts individual, group, or facilitative therapy for children whose diagnosed problems would indicate benefit from such an experience.

JOB DESCRIPTION

TITLE: Teacher of Gifted and Talented

QUALIFICATIONS: As set by State certification authorities

REPORTS TO: Principal and Gifted and Talented Coordinator

JOB GOAL: To act as facilitator and resource guide to enable the more able students to develop their potentialities for intellectual, emotional, social, and psychological growth and maturation to the fullest extent possible

HIP TEACHER JOB DESCRIPTION:

1. Plans with gifted program coordinator and school principal, a program that, as much as possible, meets the individual needs, interests, and abilities of gifted and talented students

2. Creates a classroom environment that is conducive to learning and appropriate to the maturity level of students and utilizes pupil abilities and interests constructively

3. Guides the learning process toward the achievement of program goals, establishing broad concepts rather than specific, and communicates these goals effectively to students

4. Employs varied instructional materials and encourages students in self-selection of materials using higher conceptual levels of difficulty

5. Maintains classroom resource center containing appropriate advanced level materials and serves as a facilitator to bring student, resources, and resource people together

6. Utilizes various forms to evaluate the program, teacher, and student, using predetermined criteria

7. Counsels with supervisors, students and parents on a regular basis

8. Attends staff meetings, in-service workshops, and gifted organization and parents' meetings

9. Establishes and maintains effective relationships with staff, classroom teachers, parents and local community

10. Utilizes an end-of-the month newsletter to acquaint parents and school personnel with activities of the program

11. Uses varied teaching strategies that effectively stimulate higher-level thinking skills, primarily by application, analysis, synthesis, and evaluation, by employing the inquiry approach

12. Presents activities that challenge, encourage, and stimulate the students toward self-direction, independent thinking, and willingness to attempt alternative approaches

13. Employs varied problem-solving techniques effectively, such as inductive and deductive reasoning, using both scientific and creative approaches

14. Conducts group discussions, skillfully encouraging the growth and development of student participation and leadership

15. Encourages students in creative development, ie, encourages fluent, flexible, original, and elaborative thinking; and encourages risk taking, curiosity, imagination, and willingness to seel alternative or divergent approaches

16. Develops an evolving curriculum that is on the cutting edge of current theory and practice, and acts as a model to disseminate innovative techniques and approaches to the educational community by acting as consultant and exemplar

17. Encourages students to take responsibility for their own intellectual, social and emotional behavior and growth

18. Facilitates students' career awareness and exploration

19. Displays enthusiasm, employs humor constructively, demonstrates openness to change, is unthreatened by own mistakes, and is unembarrassed by criticism of students

20. Keeps abreast of changes and developments in the profession by attending professional meetings, reading professional journals and other publications, and discussing problems of mutual interest with others in the field.

TERMS OF EMPLOYMENT: 9 months

EVALUATION: Performance of this job will be evaluated annually in accordance with provisions of board policy on evaluation of administrative personnel.

What Is A Teacher of the Gifted?

By Jack P. Nix

It is desirable that teachers of the gifted have the following characteristics and skills:

1. The ability to utilize research type teaching when working with gifted students and the ability to teach students to use research approaches to learning.

2. The ability to recognize a gifted student and to accept him for himself.

3. A high degree of general intelligence and an indepth knowledge of the academic areas being taught.

4. A thorough understanding of the nature of giftedness and its relationship to developmental patterns of growth.

5. The ability to recognize and manipulate ideas and the ability to translate ideas into learning situations that enable the student to gain knowledge and understanding of his responsibility to self and society.

6. Recognition of processes of learning and the ability to assist students in becoming involved in processes of learning.

7. The ability to teach with enthusiasm and to transmit this enthusiasm to students in such a way that a love of learning develops.

8. A willingness to become a learner along with students.

9. The ability to create a classroom atmosphere that allows the student to become responsible for his own learning and one that is conducive to good mental health.

10. The ability to create and implement a flexible, enriched, challenging, and individualized curriculum which is suited to each student's needs and avoids quantity without quality.

11. An understanding of the social and emotional problems that may be created for the gifted student because of his accelerated mental development.

12. A positive attitude toward teaching the gifted.

13. The ability to create an environment in which the gifted learn to participate effectively in small group and large group situations and in which students learn to work independently.

14. A willingness to become a facilitator of learning.

From: Mentally Gifted Minor Program: Teacher Handbook. Sunnyvale School District, 1971.

Rating Scale of Significant Behaviors in Teachers of the Gifted

Rater________________________
Ratee________________________
Date________________________
School________________________
Grade Level____________________
Length of Observation____________
Subject(s) being taught____

To the Rater: A Minimum of 40 minutes should be used for each observation. Use every opportunity to examine folios of materials, files of children's products and other evidence, as well as teacher behavior, to confirm impressions.

Teaching Process	Seldom 1	Occasionally 2	Frequently 3
1. Utilizes specialized pupil interests constructively.			
a. Students work in areas of interest.	___	___	___
b. Teacher capitalizes on student interest in classroom.	___	___	___
2. Utilizes special talents and abilities of the students.			
a. Students are involved in activities which display or include their special abilities and talents.	___	___	___
b. Individualized materials are available for development of special talents and abilities.	___	___	___
3. Encourages self-selection of materials			
a. Students have freedom to select materials at higher conceptual levels of difficulty.	___	___	___
b. Teacher encourages pupils to make own selections and decisions.	___	___	___
4. Makes classwork interesting through use of different sense media.			
a. Teacher encourages effective pupil displays, not teacher-made displays.	___	___	___
b. Teacher uses maps, charts, TV, radio and/or films to augment or advance the quality of instruction.	___	___	___
5. Maintains or uses classroom resource center containing materials at appropriate advanced levels.			
a. Learning resources are openly available to students.	___	___	___
b. Teacher serves as a resource to pupils.	___	___	___

	Seldom 1	Occasionally 2	Frequently 3
6. Clarifies classroom goals and purposes using broad concepts rather than detail.			
a. Relates discussion to course objectives.	___	___	___
b. Student's performance indicates understanding of course objectives.	___	___	___
7. Uses varied teaching strategies effectively.			
a. Teacher is sensitive to students' responses, both verbal and non-verbal.			
1. Teacher responds to visible cues in physical behavior of students.	___	___	___
2. Teacher uses student verbal reactions to extend student insights and understandings.	___	___	___
8. Conducts group discussions skillfully			
a. Teacher withholds own ideas and conclusions.	___	___	___
b. Teacher encourages participation of students in discussions.	___	___	___
9. Selects questions that stimulate higher-level thinking.			
a. Questions encourage students to draw analogies and to indicate relationships.	___	___	___
b. Students are able to ask analytic questions.	___	___	___
c. Students generalize from concrete to abstract. at advanced levels.	___	___	___
10. Utilizes synthesis and analysis in appropriate areas.			
a. Teacher utilizes effectively inductive and deductive reasoning and is able to apply techniques in classroom.	___	___	___
b. Teacher assists and/or encourages students to relate theory to practice.	___	___	___
11. Draws examples and explanations from various sources and related fields.			
a. Interrelationships are emphasized by teacher and students.	___	___	___
12. Presents activities that challenge and stimulate the students.			
a. Students are eager to work on activities	___	___	___
b. Teacher varies the kind of assignment to the learning abilities and interest of the students.	___	___	___
c. Teacher emphasis is on broad ideas and not drill and rote memory activities.	___	___	___
13. Utilizes evaluation in various forms.			
a. Teacher helps students in self-evaluation and self-improvement.	___	___	___

	Seldom 1	Occasionally 2	Frequently 3
14. Encourages independent thinking, including difference of opinion.			
a. Students are encouraged to examine thoroughly and accurately controversial issues.			
1. Students compare and contrast different issues, using objective evidence.	___	___	___
15. Gives appropriate encouragement to pupils.			
a. Teacher gives praise when deserved.	___	___	___
b. Teacher makes students feel worthy.	___	___	___
c. Teacher provides for recognition of outstanding creative and/or scholarly performance.	___	___	___
16. Understands and encourages student ideas.			
a. Teacher encourages students to try new approaches.-	___	___	___
b. Teacher is tolerant of students' attempts to find solutions of problems.	___	___	___
c. Teacher encourages "guesses" by students and facilitates evaluation of guesses by students.	___	___	___
d. Teacher helps students to realize that research involves trial and error.			
1. Students are encouraged to apply principles of scientific procedures.	___	___	___
Teacher Background			
17. Is unthreatened by own mistakes.			
a. Teacher is undisturbed and unembarrassed by own mistakes or criticism of students.	___	___	___
18. Teacher displays enthusiasm and employs humor constructively.			
a. Teacher is energetic and animated.	___	___	___
SUMMARY ITEM:			
19. Demonstrates understanding of the educational implications of giftedness.			
a. Teacher uses implications of characteristics in the classroom operation, selection of materials, schedules, and questions.	___	___	___

Martinson, Ruth A. and Wiener, Jean, co-Directors, The Improvement of Teaching Procedures with Gifted Elementary and Secondary Students, Project 6-1244, Washington, D.C., Bureau of Research, U.S. Office of Education, Department of Health, Education and Welfare. June, 1968. Pp. 45-46.

Committees, Parents, and P.R.

Committee Functions

The use of on-going committees to develop and guide school programs is a "given" in education. The original committee is usually called a planning or steering committee. Ideally, it is composed of the superintendent, members of the board of education, the administrative staff and interested community leaders. Often several teachers are included (a strong opposition member as an advocate may strengthen the program, for their criticisms may be used to iron out any possible weaknesses). The chairman of this committee should be the coordinator of the program for talented and gifted. Possible activities of this committee are to:

---Investigate the scope of the problem
---Determine community attitudes toward gifted and talented program
---Identify general school objectives with which to dovetail gifted and talented objectives and goals
---Present philosophy to board of education for approval
---Choose definition for gifted and talented that best meets system's needs
---Help establish criteria for identifying gifted and talented
---Serve as a clearinghouse for discussion of problems that arise
---Determine needs of selected group of children. Specialists in both curriculum and guidance need to be consulted.
---Evaluate current program in terms of gifted and talented needs
---Decide which administrative provisions need to be made to facilitate program development.

The results of committee research and should be shared with all members at all time. All policy matters and a continuous summary of the committee's findings must be properly presented to the school board. Keep everyone fully informed by publicizing the committee actions and findings.

Often a steering committee is formed and is still in existence when a Parent Advisory Council for a program becomes involved. Both can work together for the development of a gifted and talented program. Specific role functioning of each group follows:

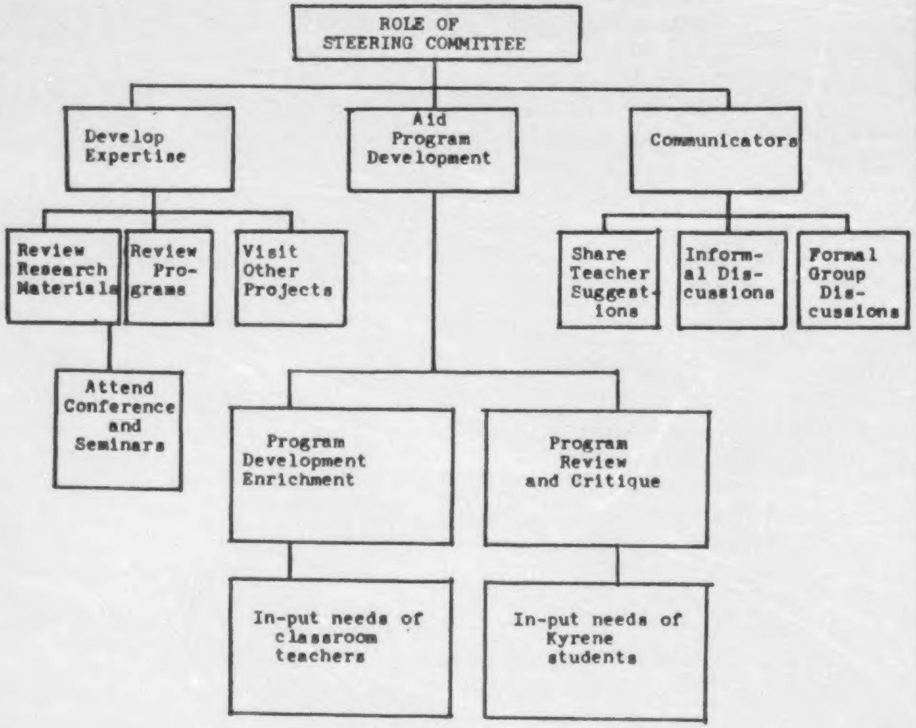
KYRENE SCHOOL DISTRICT 28
GIFTED AND TALENTED STEERING COMMITTEE
For: HUMAN INDIVIDUAL POTENTIALITIES

PURPOSE

The purpose of the Kyrene Steering Committee is to assist in the development of the Human Individual Potentialities program ESEA Title III for the Gifted and Talented.

ROLE

The function of the Steering Committee will be to review research, assist in program development and make recommendations to ESEA Title III personnel concerning their findings.


ROLE OF STEERING COMMITTEE
Develop Expertise
Aid Program Development
Communicators
Review Research Materials
Review Programs
Visit Other Projects
Attend Conference and Seminars
Share Teacher Suggestions
Informal Discussions
Formal Group Discussions
Program Development Enrichment
Program Review and Critique
In-put needs of classroom teachers
In-put needs of Kyrene students

COMMITTEE MEMBERSHIP

The Steering Committee is composed of representatives of District teachers, representatives of district administrators and representatives of the Parent Advisory Council.

STEERING COMMITTEE GOAL

Assist in design and development of program for gifted and talented in the Kyrene District grades K - 8.

PERFORMANCE OBJECTIVES

1. Develop expertise in the area of gifted and talented programs.

   Activities:
   The Steering Committee will become knowledgable in the area of giftedness and talented by:

   (1) reviewing materials on current and past gifted and talented programs
   (2) review current relevant research on gifted and talented programs
   (3) visiting other schools to observe gifted and talented programs in operation
   (4) attend conferences and training programs for the gifted and talented.

2. The Steering Committee will assist in the planning and development of the Kyrene ESEA Title III project for the gifted and talented by:

   Activities:
   (1) offer oral and written suggestions for the development and enrichment of the program being developed
   (2) offer oral and written critique of materials currently being used in program development
   (3) offer oral and written suggestions regarding specific needs of Kyrene classroom teachers
   (4) offer oral and written suggestions regarding specific needs of Kyrene students.

3. The Steering Committee will help the Kyrene classroom teachers, parents, students and other interested citizens by:

   Activities:
   (1) Sharing suggestions relating to teachers
   (2) relaying information gleaned on gifted and talented through informal discussion in small groups
   (3) identify Steering Committee members with competencies in making formal presentations.

Parent Advisory Council

PURPOSE

The purpose of a Parent Advisory Council is to assist in the development and implementation of a gifted and talented program.

ROLE

The function of the Parent Advisory Council is to assist in the development, maintenance and evolution of a program for the gifted and talented.

COMMITTEE MEMBERSHIP

The Parent Advisory Council is composed of representative parents and other community resource persons.

GOALS

1. To review the literature and gain expertise in the area of gifted and talented
2. Become familiar with a variety of programs and know where to get additional information
3. To make an assessment of the needs of the identified gifted and talented students and state them in broad terms
   Example: Gifted and talented students need educational experiences commensurate with their abilities.
4. To develop a concensus of these needs
5. To look for a variety of alternatives to meet these needs
6. To establish some specific end goals which are consistent with the general philosophy of the school district
7. To assist in development of processes which will bring about the specific end goals
8. Be able to organize, and to keep going, a local parent group to act as change agents, advocates and facilitators in behalf of the gifted and talented children
9. Communicate program needs, development, events, etc., to other parents and the community at large through news releases, newsletters, telephone trees, etc.

Parent Involvement

Suggestions of what parents might do include:

1. Provide the child a home with as much stimulation and challenge in as many areas as possible.
2. Get involved with groups to promote programs for gifted. Try to influence legislation, school board, principals and teachers.
3. Support programs for gifted. Become a member of a Parent Advisory Council or other decision-making group.
4. Give direct assistance to the school's program, such as providing transportation, teaching a short-term course, serving as a teacher aide, sponsoring or coordinating events, publishing newsletters and, establishing a core of resource persons.
5. Be a childrens' advocate by supporting their right to be themselves as persons. Allow them to be honest and maintain their integrity.
6. See children as valuable in and of themselves, not primarily for their intelligence or talents. Avoid discussion with others which label the child as "gifted." Parents who boast guarantee resentment. Avoid comparison with other children in the family. Evenly distribute love and affection. Recognize the various accomplishments of all children. Discuss the particular contribution of each individual.
7. Aid the child who has developed an unrealistic sense of his/her own importance by asking him/her to assess the impact on others of this specific behavior. Let the child provide the analysis and suggest ways to improve the relationship.
8. Express appreciation when school personnel give special attention to strengths of children rather than weaknesses.

SUGGESTIONS FOR PARENTS OF ABLE CHILDREN

J. C. Gowan
San Fernando Valley State College
Northridge, California

1. They are still children. They need love but controls; attention but discipline; parental involvement, yet training in self-dependence and responsibility.

2. Consonance of parental value systems is important for their optimum development. This means that there should not be wide disagreements over values between parents.

3. Parental involvement in early task demands, such as training them to perform tasks themselves, to count, tell time, use correct vocabulary and pronunciation, locate themselves, and get around their neighborhood, do errands and be responsible are all important.

4. Emphasis on early verbal expression, reading, discussing ideas in the presence of children, poetry and music are all valuable. Parents should read to children. There should be an emphasis by parents on doing well in school.

5. The lack of disruption of family life through divorce or separation, and the maintenance of a happy, health home is an important aspect in raising able children, as well as other children.

6. Since able children often have vague awareness of adult problems such as sex, death, sickness, finances, war, etc., which their lack of experience makes them unable to solve, they may need reassurance in these areas.

7. Parents can see to it that the gifted child, age six or above, has a playmate who is as able, even if he has to be "imported" from some distance.

8. The role of good books, magazines and other aids to home learning, such as encyclopedias, charts, collections, etc., is important.

9. Parents should take the initiative in taking able children to museums, art galleries, educational institutions and other historical places where collections of various sorts may enhance background learning.

0. Parents should be especially careful not to "shut up" the gifted child who asks questions. In particular, he should not be scolded for asking, nor should it be inferred that this is an improper or forbidden subject. The parent may, however, insist that questions not be asked at inappropriate times, and he may require the child to sharpen or rephrase his question so as to clarify it. Sometimes questions should not be answered completely, but the reply should itself be a question which sends the child into some larger direction. When the parent cannot answer the question, he should direct the child to a resource which can. Sometimes questions call for clarification of concepts, as with the young child who asked, "Why aren't all those rockets liable to shoot down God?"

1. There's a difference between pushing and intellectual stimulation. Parents should avoid "pushing" a child into reading, "exhibiting" him before others or courting undue publicity about him. On the other hand, parents should seek in every way to stimulate and widen the child's mind, through suitable experiences in books, recreation, travel and the arts.

12. The gifted child usually has a wide and versatile range of interests, but he may be somewhat less able to concentrate on one area for a long time. Parents should encourage children who have hobbies to follow through on them, to plan and strive for creditable performance and for real mastery, rather than "going through" a lot of bobbies or collections in a short time.

13. Parents should avoid direct, indirect or unspoken attitudes that fantasy, originality, unusual questions, imaginary playmates, or out-of-ordinary mental processes on the part of the child are bad, "different" or to be discouraged. Instead of laughing at the child, laugh with him and seek to develop his sense of humor.

14. Parents should avoid overstructuring children's lives so that they don't have any free time. Sometimes parents are concerned that gifted children spend some time in watching TV or reading comic books. While they should not spend all their time in doing so, they cannot be expected to perform at top capacity at all times.

15. Respect the child and his knowledge, which at times may be better than your own and impatient of authority. Assume he means to do right, and the deviations are not intentional. Do not presume on your authority as a parent except in crises. Allow much liberty on unimportant issues. Try To give him general instructions to carry out in his way rather than specific commands to carry out in yours.

16. Gifted children are sometimes impatiant of conventions. Have a frank talk with your child about the importance of conventions, such as driving on the right hand side, where he can see the social advantages, and then point out that other conventions of politeness, manners, courtesy and regard for others have similar bases in experience.

17. Whenever possible, talk things out with him where there has been a disciplinary lapse. He is much more amenable to rational argument than are many children and usually has a well developed sense of duty.

18. Give him the stimulation of private lessons in some skill in which the excels. See that he has social membership in worthy groups. Foster special experiences outside the home by his traveling alone, or visiting friends overnight. Try to facilitate his chance to talk alone with an adult authority in some line that interests him.

19. Try to improve his sense of taste in mass media, TV, radio, cinema, newspapers, comics, reading, arts, etc. Discuss the basis for taste and give him some experience with new forms of expression in the arts.

20. Take time to be with him, to listen to what he has to say, to discuss ideas with him.

21. Be a good example yourself, and try to find worthy adult model figures of both sexes outside his family for him to know.

22. Support the school efforts to plan for able children. Help to interest the PTA in the problem. Support study groups on gifted children. Form with other parents into cooperative endeavors.

23. Investigate scholarship programs of your community for other gifted children and help provide them.

24. Work to provide better community understanding of, and appreciation of, the role of the able child in society and the importance of community planning.

25. Support community action for able children, including bonds and school taxes for extra educational advantages. Advocate more guidance and special education for the gifted.

What about the gifted and talented?

SOME QUESTIONS AND ANSWERS----

1. WHO ARE THE GIFTED AND TALENTED?

The gifted and talented are those children and youth whose abilities, talents and potential for accomplishment are so outstanding that they require special provisions to meet their educational needs. These are persons of exceptional promise whose capabilities predict contributions of lasting merit in widely varying fields. They come from all walks of like with special abilities and talents ranging across a wide spectrum of human achievement. As adults they are the leaders in government, medicine, invention, the creative arts, the communicative arts, philosophy, industry, science, and many other fields.

The failure to identify the gifted and talented properly in minority populations or in impoverished communities has led to under-representation for some groups. In all populations, identification has been inadequate. Because they are capable of good performance with little effort and can adapt to the school environment with ease, they tend to remain unrecognized, and their abilities are unknown.

Researchers believe that such children and youth can be identified at a very early age through individual testing and observation. Giftedness has been found in all walks of life, although environmental factors make it more difficult to identify the gifted and talented from minorities and divergent cultures. As expected, the gifted and talented perform at levels far ahead of their chronological peer groups and are also more advanced in their interests, skills and psychological maturity.

2. HOW MANY GIFTED AND TALENTED STUDENTS ARE THERE IN THE NATION?

The 1970 census estimate the total school population of the United States at 51,600,000. Within that population, the number of gifted and talented students requiring special educational attention is estimted at 2,580,000. In the scholastic areas, these are the persons who go beyond easy success with advanced academic content to unusually high levels of understanding, idea production, and superior accomplishment. The creative and talented among them give evidence of promise of contributions of lasting value and require special provisions to assure development of their abilities.

3. WHY SHOULD GIFTED AND TALENTED CHILDREN AND YOUTH GET SPECIAL ATTENTION?

If democratic education means educational opportunities appropriate to a child's ability then the gifted and talented generally are being inappropriately served, and human talent and youth cannot ordinarily grow toward their potential without special assistance. Placed in unchallenging educational opportunities, which sometimes are even hostile toward the behavior of the gifted and talented, they frequently tend to conceal their extraordinary abilities and bury them in underachievement.

4. WHAT IS THE EDUCATION OF THE GIFTED AND TALENTED?

Education for the gifted and talented requires an understanding that their differences from the average are both real and legitimate. Programs are planned for them, not on the basis of content which suits the majority of pupils, but on the basis that their advanced accomplishments and interests require different content and different opportunities. As all other students, they must have educational experiences at an appropriate level for them. An adequate program provides interest and challenge, instead of merely the opportunity to mark time and do "good" work.

The hallmark of education for the gifted and talented is careful planning of individual opportunities for advanced learning which are suitable to exceptior minds and talents. Such education enhances development; it does not restrict or postpone. It accommodates the school to the students, rather than the reverse. In short, it recognizes their right to learn.

5. WHAT IS THE STATUS OF SCHOOL PROGRAMS FOR THE GIFTED AND TALENTED?

According to recent surveys, the majority of those recognized as gifted and talented receive little attention at best. One-third or more of the known gifted receive no special instruction. The majority of gifted children and youth are taught in regular classrooms, whose teachers rarely have time to devote extra effort to these very able students. Most identified gifted and talented children and youth receive little or no attention at the elementary school level, while the programs at the secondary level consist mainly of separate part-time classes.

6. WHAT KINDS OF TEACHERS ARE NEEDED FOR THE GIFTED AND TALENTED?

Preparation of teachers to work with the gifted and talented is an important priority. The need for special training is imperative. Teachers with no special background for training the gifted and talented have been found disinterested in, and even hostile toward, the gifted and talented. Inservice programs to help all teachers appreciate the gifted and talented can do much to assure better opportunities for them. Generally, successful teachers of the gifted and talented are interested in scholarly and artistic pursuits, have wide interests, a sense of humor, are student-centered, are enthusiastic about teaching and recognize the need for advanced study for themselves.

7. CAN LOCAL SCHOOLS PROVIDE ADEQUATELY FOR THE GIFTED AND TALENTED?

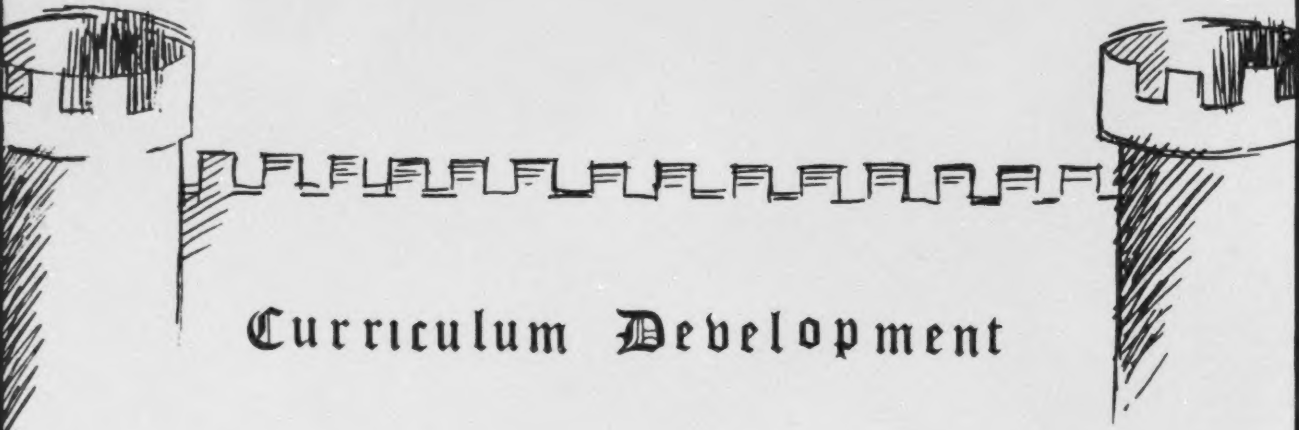
Under special conditions, the public schools can competently provide for gifted and talented children and youth. Such special conditions could be: (1) well designed identification processes; (2) awareness and commitment on the part of school administrators as to the needs of the gifted and talented; (3) staff orientation and training to assist in identification and to support special services for them; (4) adequate human and material resources, including trained teachers, should be provided to meet their needs; (5) differentiated experiences and activities parallel to their needs should be developed along with process strategies to carry them out.

8. WHAT SHOULD STATE EDUCATION AGENCIES BE ENCOURAGED TO DO?

First, state education agencies should provide trained personnel from the agency to work with local school districts. These consultants would provide consultative services to school districts to assist them in developing special programs and/or services for the gifted and talented. The state agencies may find adequate federal support under existing titles to provide funds for such personnel.

Recent surveys show that when states provide appropriate leadership personnel that there is an appreciable increase in the number of gifted and talented children identified, and a sharp increase in the number of special programs provided at the school district level.

Part Two



Curriculum Development

Introduction

The ultimate purpose of the Seminar Curriculum is to flow from the characteristics of the students and therefore fulfill their needs. Gifted students then need to have activities which give them the opportunity to think abstractly, to reason, to solve problems, and to see relationships at higher levels of cognition. This purposely distinctive curriculum will provide a differentiated education for the gifted.

The question is often asked, "Would not this curriculum be beneficial to all students?" The answer is, "NO." The average student might be bored or frustrated in a class purposely designed for students of exceptional ability.

Models and Theories

Education for the gifted requires differentiated and enriching curriculum. *The Taxonomy of Educational Objectives*, *Handbooks I & II*, by B. S. Bloom, David Krathwohl, and Associates (1964 and 1956), with psychomotor additions proposed by Elizabeth Simpson (ERIC Ed 010-368), gives us the basis for a total learning taxonomy. Classifying all educational objectives under the *cognitive*, *affective*, and *psychomotor* domains provides a theoretical framework to structure a more complete curriculum and stress the higher level thinking processes.

J. P. Guilford (1967) describes a theory for the *Structure of Intellect* (SOI) which enables the teacher to design a curriculum differentially focusing upon *operations*, *contents*, and *products*. His identified operations--*Cognition*, *Memory*, *coNvergent production*, *Divergent production*, and *Evaluation*--enables the teacher to design for the specific interplay of the intellect desired. Mary Nacol Meeker (1969, 1973) extends Guilford's work for an individually programed curriculum.

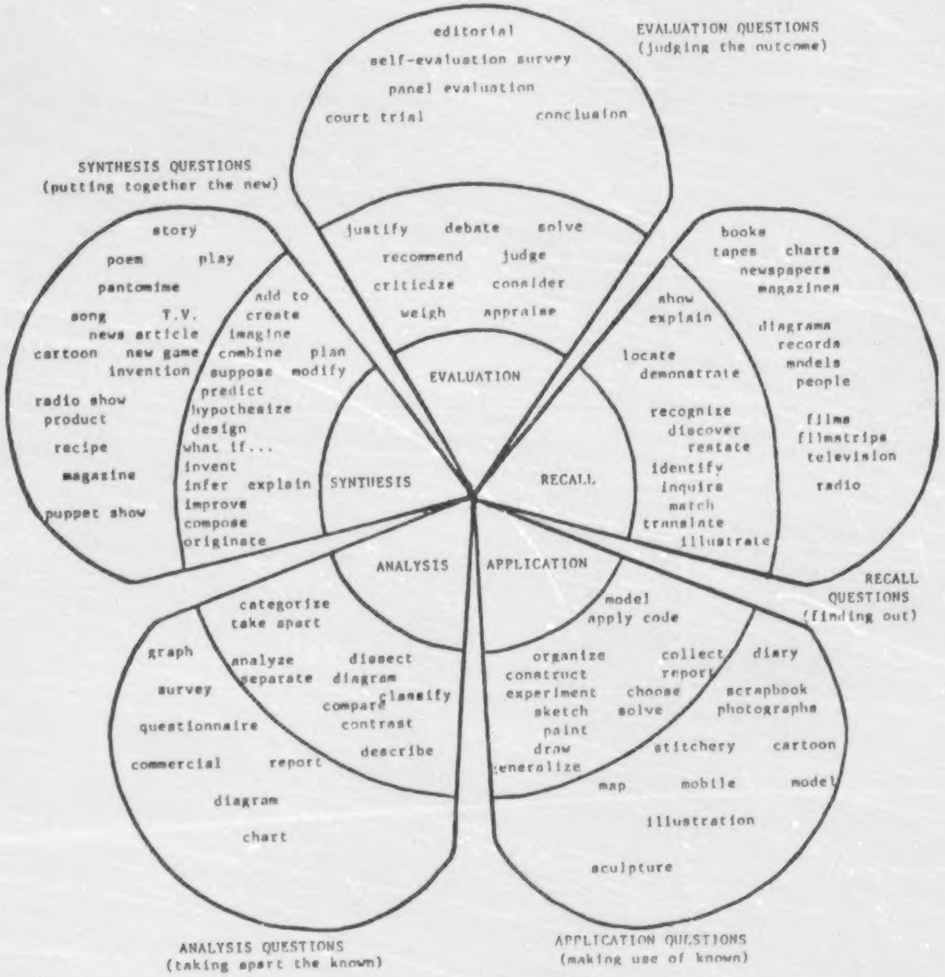
Theory of Creativity must have a place in curriculum for the gifted. E. P. Torrance (1970) has done pioneering work in this area. Frank Williams describes creative pupil behaviors which include cognitive and affective components. James A. Smith provides the principles of creativity. Lucito (1972) compiles a list of characteristics. We express gratitude to these and other unnamed theorists and researchers for suggesting structure for logical and comprehensive coverage of skill development.

A TOTAL LEARNING TAXONOMY

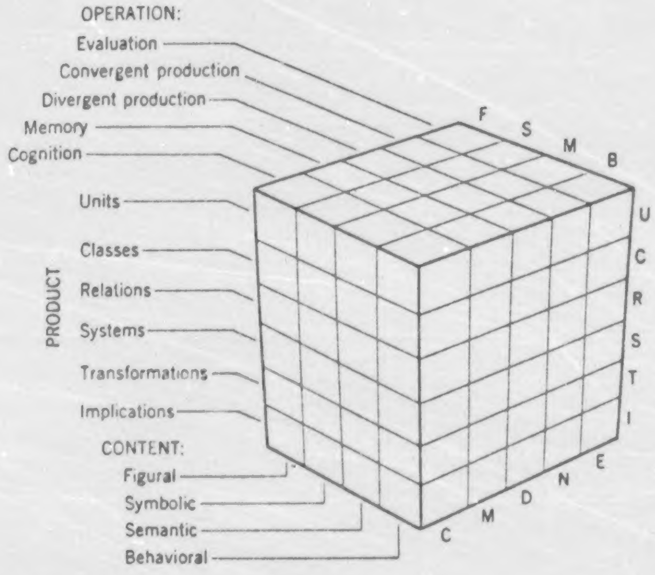
(acting + feeling + thinking)

Psychomotor Domain	Affective Domain	Cognitive Domain
6. Evaluation: Ability to judge physical aci for a given purpose.	6. Evaluation: Reconsidering new and judging old values for change.	6. Evaluation: Ability to judge value of material for a given purpose.
5. Complex Overt Response: High level of skill attained--motor act complex. Resolution of uncertainty-act performed without hesitation. Automatic Performance-finely coordinated skills.	5. Value Complex: Predictable set of values joined to become "life style"	5. Synthesis: Ability to put the parts together to form a new whole.
4. Mechanism: Learned is practiced and becomes habitual. Abilities are combined in action of a skilled nature.	4. Organization: Bringing together different values, resolving conflicts between them.	4. Analysis: Ability to break down material into its component parts so whole structure understood.
3. Guided Response: Overt behavioral act of individual under guidance of instructor. Imitation--execution of act as a direct response to perception of another performing the act. Trial and error--trying various responses until appropriate.	3. Valuing: Worth attached to a particular object, phenomena or behavior.	3. Application: Ability to use materials in new concrete situations.
2. Set: Readiness for particular kind of action. Mental Set--readiness to perform motor act. Physical Set--anatomical adjustments made to perform motor act. Emotional Set--readiness of attitudes favorable to motor acts taking place.	2. Responding: Active participation, reacting to the phenomena.	2. Comprehension: Ability to grasp the meaning of the materials.
1. Perception: Becoming aware of objects, qualities or relations. Sensory stimulation--auditory, visual, tactile, taste, smell, kinesthetics. Cue selection--deciding which Cue to respond to. Translation--determining meaning to received cues for action.	1. Receiving: Willingness to attend to particular phenomena or stimuli.	1. Knowledge: Recall of previously learned materials.

CURRICULUM IN BLOOM


EVALUATION QUESTIONS
(judging the outcome)
editorial
self-evaluation survey
panel evaluation
court trial
conclusion
justify
debate
solve
recommend
judge
criticize
consider
weigh
appraise
SYNTHESIS QUESTIONS
(putting together the new)
story
poem
play
pantomime
song
T.V.
news article
cartoon
new game
invention
radio show
product
recipe
magazine
puppet show
add to
create
imagine
combine
plan
suppose
modify
predict
hypothesize
design
what if...
invent
infer
explain
improve
compose
originate
EVALUATION
SYNTHESIS
RECALL
ANALYSIS
APPLICATION
books
tapes
charts
newspapers
magazines
show
explain
diagrams
records
models
people
locate
demonstrate
recognize
discover
restate
identify
inquire
match
translate
illustrate
films
filmstrips
television
radio
RECALL
QUESTIONS
(finding out)
categorize
take apart
graph
survey
analyze
separate
dissect
diagram
classify
compare
contrast
describe
questionnaire
commercial
report
diagram
chart
model
apply code
organize
construct
experiment
sketch
paint
draw
generalize
collect
report
choose
solve
diary
scrapbook
photographs
stitchery
cartoon
map
mobile
model
illustration
sculpture
ANALYSIS QUESTIONS
(taking apart the known)
APPLICATION QUESTIONS
(making use of known)

THE STRUCTURE OF INTELLECT
GUILFORD'S CUBE


OPERATION:
Evaluation
Convergent production
Divergent production
Memory
Cognition
PRODUCT
Units
Classes
Relations
Systems
Transformations
Implications
CONTENT:
Figural
Symbolic
Semantic
Behavioral
F
S
M
B
U
C
R
S
T
I
C
M
D
N
E

From The Nature of Human Intelligence
by J. P. Guilford. Copyright © 1967,
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Creativity

Definition

There is a lack of agreement among educators about the definiton of creativity and its distinctiveness from intelligence. Torrance's (1973) definition of creativity has wide currency in educational circles. He defines creativity as

> *"becoming sensitive to or aware of problems, deficiencies, gaps in knowledge, missing elements, disharmonies and so on; bringing together available information; defining the difficulty or identifying the missing element; searching for solutions, making guesses or formulating hypotheses about the deficiencies, testing and retesting these hypotheses and modifying and restating them; perfecting them and finally communicating the results."* (p.22)

Creativity is a natural, healthy process and a strong human need. It appears to consist of multi-dimensional processes. Creativity is the ability to see new relationships. It is to draw upon experiences of the past, add an intuitive flash, and come up with something new. Discipline and impulse are both necessary ingredients. Silvano Arieti, in Creativity: The Magic Synthesis, says that creativity is a rare coming together of irrational forces and the rational, logical and cognitive forces. He recommends certain attitudes and conditions for fostering this "magic syntheses." These include:

> "(1) *aloneness,* (2) *inactivity,* (3) *daydreaming,* (4) *free thinking,*
> (5) *a state of readiness for catching similarities,* (6) *gullibility,*
> (7) *remembrance and inner replaying of past traumatic conflicts,*
> (8) *resolution of conflicts,* (9) *alertness, and* (10) *discipline."*

CREATIVE PUPIL BEHAVIORS AS DESCRIBED BY FRANK WILLIAMS INCLUDES COGNITIVE AND AFFECT AS SHOWN BELOW

Behavior	Meaning
COGNITIVE - INTELLECTIVE	
Fluent Thinking To think of the *most*--	Generation of a quantity Flow of thought Number of relevant responses
Flexible Thinking To take *different* approaches--	Variety of kinds of ideas Ability to shift categories Detours in direction of thought
Original Thinking To think in *novel* or *unique* ways--	Unusual responses Clever ideas Production away from the obvious
Elaborative Thinking To *add on* to--	Embellish upon an idea Embroider upon a simple idea or response to make it more elegant Stretch or expand upon things or ideas
AFFECTIVE - FEELING	
Risk Taking To have *courage* to--	Expose oneself to failure or criticisms Take a guess Function under conditions devoid of structure Defend own ideas
Complexity To be *challenged* to--	Seek many alternatives See gaps between how things are and how they could be Bring order out of chaos Delve into intricate problems or ideas
Curiosity To be *willing* to--	Be inquisitive and wonder Toy with an idea Be open to puzzling situations Ponder the mystery of things To follow a particular hunch just to see what will happen
Imagination To have the *power* to--	Visualize and build mental images Dream about things that have never happened Feel intuitively Reach beyond sensual or real boundaries

From Classroom Ideas for Thinking and Feeling by Frank Williams. Used with permission from D.O.K. Publishers, Inc., Buffalo, New York, 14214.

PRINCIPLES OF CREATIVITY[1]

Research in the past ten years has helped educators to arrive at some basic conclusions on creativity. It will help us to better understand what creative teaching is if we review these principles:

1. All children are born creative and have creative powers.
2. There is a relationshp between creativity and intelligence; highly creative people are always highly intelligent, though highly intelligent people are not always creative. All children can create to some degree. There is very little relationship between intelligence and creativity other than the fact that a degree of intelligence is necessary for the creative process to take place.
3. Creativity is a form of giftedness which is not measured by current intelligence tests.
4. All areas of the curriculum may be used to develop creativity. It is not confined solely to the creative arts.
5. Creativity is a process and a product.
6. Creativity is developed by focusing on those processes of the intellect which fall under the general area of divergent thinking. This area of the intellect has been greatly neglected in our teaching up to this point.
7. All creative processes cannot always be developed at one time, or in one lesson. Lessons must be planned to focus on each process.
8. Creativity cannot be taught; we can only set conditions for it to happen and insure its reappearance through re-enforcement.
9. More knowledge, more skills and more facts than ever before are required for creativity to be developed.
10. The sequence of creative development leads us to believe that children must be able to tap all of life's experiences in order to become truly creative; unnecessary rules and actions may force much of their experience into the preconscious or subconscious mind where it cannot be readily used.
11. Excessive conformity and rigidity are true enemies of creativity.
12. Children go through certain steps in the creative process.
13. Creative teaching and creative learning have been more effective than other types of teaching and learning.
14. Children who have lost much of their creativity may be helped to regain it by special methods of teaching.
15. Creativity is developmental; children begin at a simple stage and progress to more difficult stages of productivity.

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[1] Taken from James A. Smith, *Setting Conditions for Creative Teaching in the Elementary School* (Boston: Allyn and Bacon, 1966), pp. 1–21.

BLOCKS TO CREATIVITY

I.	FEAR OF FAILURE	Drawing back; not taking risks; settling for less in order to avoid the possible pain or shame of failing.
II.	RELUCTANCE TO PLAY	Literal. Overly serious problem-solving sytle; Not "playing around" with stuff. Fear of seeming foolish or silly by experimenting with the unusual.
III.	RESOURCE MYOPIA	Failure to see one's own strengths; Lack of appreciation for resources in one's environment - People and Things.
IV.	OVER-CERTAINTY	Rigidity of Problem-solving responses; Stereotyped reactions; Persistence in behavior that is no longer functional; Not checking out one's assumptions.
V.	FRUSTRATION AVOIDANCE	Giving up too soon when faced with obstacles; Avoidance of the pain or discomfort that is often associated with change or novel solutions to problems.
VI.	CUSTOM-BOUND	Over-emphasis on traditional ways of doing things; Too much reverence for the past; Tendency to conform when it is not necessary or useful.
VII.	IMPOVERISHED FANTASY LIFE	Mistrusting, ignoring or demeaning the inner images and visualizations of self and others; Over-valuing the so-called objective, real world; Lack of "imagination" in the sense of "let's pretend' or "what if".
VIII.	FEAR OF THE UNKNOWN	Avoidance of situations which lack clarity or which have unknown probability of succeeding; Overweighting what is not know vs what is known; A need to know the future before going forward.
IX.	NEED FOR BALANCE	Inability to tolerate disorder, confusion or ambiguity; Dislike of complexity; Excessive need for balance, order, symmetry.
X.	RELUCTANCE TO EXERT INFLUENCE	Fear of seeming too aggressive or pushy in influencing others; Hesitancy to stand up for what one believes; Ineffective in making oneself heard.
XI.	RELUCTANCE TO LET GO	Trying too hard to push through solutions to problems; Inability to let things incubate, or let things happen naturally; Lack of trust in human capacities.
XII.	IMPOVERISHED EMOTIONAL LIFE	Failure to appreciate the motivational power of emotion; Using energy in holding back spontaneous expressions; Lack of awareness of the importance of feelings in achieving commitment to individual and group effort.
XIII.	UNINTEGRATED YIN-YANG	Not making sufficient use of contrasting ways of getting at the essence of things; Polarizing things into opposites, rather than knowing how to integrate the best of both sides; lacking unified perception of the wholeness in the universe.
XIV.	SENSORY DILLNESS	Not adequately using one's primary senses as a way of knowing; Making only partial contact with self and environment; Atrophy of capacities to explore; Poor sensitivity.

(Source unknown)

THE CREATIVE*

Compiled by Leonard Lucito

1. View the work with extra wonder and see magic in it;
2. Are learning by experimenting, manipulating objects in many ways, and using stories to exercise their imaginations at preschool age;
3. Are able to be conforming or nonconforming as the situation demands;
4. Try to find answers to their question in their way;
5. Have extremely long attention spans and the ability to pursue an activity in which they are interested for extra long periods of time;
6. Can tolerate disorder and ambiguity;
7. Are able to organize themselves and ideas;
8. Tend to see familiar things and situations in unusual ways and in greater depth;
9. Often prefer to learn by creative ways rather than by being told by an authority;
10. Seem to learn considerably from fantasy as it aids in solving their problems of development;
11. Display a positive self-image;
12. Have an attraction toward the unconventional and toward complexity;
13. Seem to rely more on their own evaluations than on others;
14. Come from family backgrounds characterized by lack of overdependence of children on parents and stress of conformity by parents; strong feelings are expressed in the family; both fathers and mothers relate strongly and positively to the child even though the mother is ambivalent in her mothering feelings; more often than not the most creative child is the older sibling; fathers are usually engaged in occupations allowing for autonomy and independence;
15. Build a reputation for having wild or silly ideas, particularly the boys;
16. Display humor, playfulness, and relaxation in their creative products;
17. Wish to work alone at times;
18. Are high academic achievers provided they have a minimum IQ score of around 120;
19. Can integrate opposing impulses such as destructiveness and constructiveness;
20. Select fewer conventional occupations (e.g., lawyer, doctor, professor) and select more unconventional ones (e.g., adventurer, inventor, writer).

*Lucito, L. Creativity Traits. Atlanta: Georgia State University, 1972. Unpublished manuscript.

Lucito added traits from a study by Schaefer (1970) in which he describes 10 highly creative girls at the high school level. Schaefer's results indicated:

1. They cultivated one or two close friends rather than a wide circle of acquaintances;
2. They were open to a wide range of fantasy feelings;
3. They identified with parents but appeared emotionally independent;
4. Friends, relatives, and teachers provided models of creative behavior, particularly their fathers;
5. Their parents were non-controlling with strong cultural intellectual interests;
6. They engaged frequently in creative activities and were often rewarded for such behavior;
7. They learned to read at an early age and still are avid readers;
8. High academic success was achieved with little apparent effort.

Curriculum Units

- AFFECTIVE
  - Social Effectiveness
  - Humanities
- COGNITIVE
  - Intellectual Effectiveness
  - Independent Study
  - Creativity
- PSYCHOMOTOR
  - Physical Effectiveness
  - Recreational Activities

HIP Curriculum Structure

The Seminar Curriculum is structured in six general areas around a central core of Independent Study.

1. SOCIAL EFFECTIVENESS (Affective Domain)

Affective education refers to the emotions, feelings, attitudes, and values in a child's development. It has been called psychological education, self-knowledge, confluent education, and humanistic education. The learner's needs, feelings, and attitudes and the classroom climate become critical in the learning process.

Many students in today's schools are deprived of a complete or total education. With stress on low level cognitive skills, the student is fragmented and psychologically deprived of development in the affective self. Motivation imposed from outside (threat of punishment or withdrawal of approval) leaves the student without internal motivation. The denial of individual feelings, attitudes, and values immobilizes the student and prevents the development of the fully functioning person.

The Seminar Curriculum encourages a positive attitude toward learning, a healthy self-concept, pride in the gifts and talents of self and others, a sense of responsibility to society, and a willingness to consider the rights and needs of others--through instruction in effective discussion skills and group dynamics.

2. HUMANITIES

The Seminar Curriculum has an integrated sequential program designed to develop the students' awareness of humanity's beliefs and contributions through the centuries, as reflected in certain basic themes and styles in literature and drama, music, and art and architecture.

HIP Curriculum Structure (cont'd)

3. INTELLECTUAL EFFECTIVENESS (Cognitive Domain)

Seminar Thinking Skills sessions are designed to develop mental abilities in 90 "cells" of the Structure of Intellect Model, as identified by Guilford (1957 et al; also see Meeker, 1969)-to encourage bright kids to use their abilities and develop their potential:

Operations	X	Contents	X	Products
Cognition				Units
Memory				Classes
coNvergent production		Figural		Relations
Divergent production		Symbolic		Systems
Evaluation		seMantic		Transformations
				Implications

Each distinct ability is identified by its own trigram.

For example, a person who can quickly assemble the seven tangram pieces into a square, and then reassemble them into a triangle, parallelogram, rectangle, trapezoid, or any other given figure, has ability in NFT--coNvergent production of Figural Transformations.

A good speller is strong in MSS--Memory of Symbolic Systems; while one who can effectively judge whether the solution to a math or logic problem "makes sense" has ability in ESI--Evaluation of Symbolic Implications.

Someone with rich concepts and a large vocabulary is strong in his/her CMU cell--Cognition of SeMantic Units.

Work with basic structures--the elements of perception--includes lots of hand-on experience with figural, symbolic, and semantic didactic equipment. To reinforce concepts developed in class, each student receives a dittoed HIP Puzzle each week (usually 8½" x 5½" and attractively illustrated) to take home and share with his/her family. Each HIP Puzzle is labeled with a partial trigram to indicate what content and product is stressed. Sources of ideas for HIP Puzzles come from the Dover math and recreation series and other game and puzzle books.

Experience in the figural dimension includes work with tangrams and other geometrix puzzles, black and white Pattern Pending cubes, colored design blocks and mirrors, wooden geometric plane figures and solids, and such commercial games as Hi-Q, Switch, and Battleship. A set of 1,000 wooden cubes helps to develop concepts of one, two, and three dimensions--length, area, and volume. HIP Puzzles might deal with toothpick tricks or shape transformations.

Experience in the symbolic dimension includes work with word search puzzles, magic word squares, magic number squares, and commerical alphabet and number games such as Spill 'n' Spell, Boggle, Tuf, and Krypto. HIP Puzzles might involve anagrams, number series, or logic mini-mysteries.

Experience in the semantic dimension includes work with Wordcraft puzzles, vocabulary elements from Latin and Greek, and anything else that enriches vocabulary and enhances meaning. HIP Puzzles might feature mythology quizzes or hink pinks.

Work with basic processes--the means of conceptualization--includes experience in using basic thinking operations (Acquisition of knowledge, Translation, Interpretation, Extrapolation), and higher level thinking operations (Application, Analysis, Synthesis, Evaluation.)

The following descriptions of thinking levels are adapted from Bloom (1957).

Basic Thinking Processes (Subsumed under Recall)

Acquisition

Perceiving, storing, and retrieving basic information
(data level)

Example:
Locating specific information on a given topic and copying it verbatim

Translation

Putting ideas in a communication into parallel form
(concept level)

Example:
Paraphrasing or summarizing given information in a meaningful way

Interpretation

Relating facts, generalizations, definitions, values and/or skills explicitly on a common sense level
(generalization level)

Example:
Relating two or more items of given information and drawing conclusions about them in a way that demonstrates insight

Extrapolation

Going beyond trends or tendencies in given data
(implication level)

Example:
Extending or projecting from given information and predicting future trends

HIP Curriculum Structure (cont'd)

Higher Level Thinking Processes

Application

Using known data, concepts, generalizations, and implications to solve simulated or real-life problems (transfer-of-learning level)

Example:
Gathering appropriate information and using it to help solve a problem, conduct an experiment, or demonstrate a principle

Analysis

Solving problems in the light of conscious knowledge of the parts and processes of reasoning
(formal reasoning level)

Example:
Dissecting a commercial, newspaper editorial, or campaign speech to determine its validity

Synthesis

Engaging in imaginative, original thinking that may demonstrate fluency, flexibility, and elaboration
(creativity level)

Example:
Putting together an original essay or drama with elements drawn from many sources to create a new whole

Evaluation

Setting up appropriate standards or values and determining how closely an idea or object meets these standards or values
(valuing level)

Example:
Debating the merits of a given law, labor-saving device, or work of literature, according to developed criteria

INDEPENDENT STUDY: THE CORE OF THE SEMINAR CURRICULUM

The test of the students' proficiency in thinking--at both basic and higher levels--is their ability to function effectively as independent learners. A five-page booklet, Searching and Sharing: A Guide to Independent Study, and a two-page model Plan for Independent Study are used to help students get started on this very important work. In addition, the diagram Curriculum in Bloom interprets--on the students' level of understanding--how activities at different levels of thinking can be selected to report the results of their research.

The ultimate goal of the Seminar Curriculum is to help bright youngsters to become active, self-motivated, life-long learners, able to cope effectively with the glut of new information and unfamiliar problems.

4. CREATIVITY

Exercises in fluency, flexibility, and divergent thinking are designed to develop the creative and productive thinking essential for dealing with conditions in a rapidly changing world. These activities should lead, as well, to more depth and greater sophistication in the visual and performing arts.

5. PHYSICAL EFFECTIVENESS (Psychomotor Domain)

All children need to develop competence in the psychomotor domain. The Seminar Program encourages this through instruction in general movement, as well as in specific psychomotor skills involving visual, auditory, and tactile discrimination and eye-hand coordination. Techniques of body control and relaxation are also stressed.

6. RECREATIONAL INTEGRATIVE ACTIVITIES

The Seminar Curriculum provides students with the opportunity to gain skill in playing such games as chess, checkers, Mastermind, Clue, and Scrabble. Students may also choose to spend some time working with arts and crafts or may take part in special projects in art, dance, drama, and music.

Summary

The HIP project has been committed to the wholistic approach of integrating the three domains: affective (feeling), cognitive (thinking), and psychomotor (acting). The curriculum units are divided into these three areas as a matter of focus. However, it can be assumed the other domains are involved.

The affective domain necessarily involves considerable cognition as well as feeling. The psychomotor domain involves willingness to act,which is an affective component, and the thought process of what is to be done. The cognitive domain is often stimulated by the response of the physical senses to the environment and is accompanied by associated feelings.

The strong involvement of all three domains has been structured into each unit, whether grouped under affective, cognitive, or psychomotor sections of this guidebook. Sample units are included for teachers to use as models. The ultimate aim of the Human Individual Potentialities Program is to recognize the necessity of all three components and to integrate these components into all the curriculum.

Scope & Sequence

Scope and Sequence:

		Grades K-2		Grades
		Group I - 1st Year	Group I — 2nd Year	Group II — 1st Year
Figurative Language	1	Personification, pathetic fallacy	Pun, portmanteau word	Metaphor (direct, submerged, dead, mixed), simile
Basic Literature	2	Stuart Little - E. B. White The Lion, the Witch, and the Wardrobe - C. S. Lewis Fantasy in a realistic setting Who: Characters, motivation	The Wind in the Willows - Kenneth Grahame "Realism" in a fantasy setting Fable, parable, allegory Where: Setting	The Hobbit - J. R. R. Tolkien Fantasy in a created world When: Time of day, season (cyclical) Time in history (linear) Archetype cluster - Winter
Music Background	3	Listen to "program" music — romantic, impressionistic, expressionistic — about animals, natural and anthropomorphic: Milhand - Creation of the World Stravinsky - Rite of Spring (Fantasia - Dinosaurs) Saint Saens - Carnival of the Animals Ravel - Mother Goose Suite	Listen to "pure," non-program classical music. How does it differ from program music? Is it still possible to imagine animals, natural and anthropomorphic?	Hear music that suggests magical beasts and monsters from folktales and myths. Beethoven - Pastoral Symphony Mussorgsky - Night on Bald Mountain Stravinsky - Firebird Suite (See Fantasia)
Art Background	4	Become familiar with the work of classic animal story illustrators: Beatrix Potter, Ernest Shepard, Garth Williams, etc.	Become familiar with depictions of animals -- natural and anthropomorphic-- in fine arts from antiquity to the present. Become aware of differences between naturalistic and stylized renditions.	Become familiar with magical beasts and monsters as depicted in fine illustrations from children's literature and in the fine arts from antiquity to the present.
Drama Background	5	"Be" a favorite animal. Eliminate anthropomorphic characteristics.	Dramatize selected Aesop's Fables.	Dramatize stories dealing with magical beasts and monsters.
Historical Perspective	6	Heritage Animal characteristics Human characteristics Continents of origin of our ancestors Heredity Resemblance of offspring to parents	Orientation in time Differences between wild and domestic animals When different kinds were domesticated Natural selection, selective breeding, and genetic change Periods during which our ancestors came to America Birthdates of grandparents, parents, children Family trees	Heritage "Unnatural" natural history: Examine replicas of medieval bestiaries Changing beliefs about natural and unnatural creatures We are inheritors of accumulated knowledge: free gifts from the dead.

Humanities

3 - 4	Grades 5 - 6		
Group II — 2nd Year	**Group III — 1st Year**	**Group III — 2nd Year**	
Metonymy (direct, synecdoche, transferred epithet), symbol	Overstatement (hyperbole), understatement (litotes, etc.)	Invocation, apostrophe Irony (antiphrasis), ambiguity, oxymoron, paradox, antithesis	**Figurative Language**
The Golden Fleece - Padraic Colum Greek mythology in an adventure tale Creation, nature, and hero myths What: Plot (rising action, climax, falling action; exposition, complication, crisis, reversal, resolution) Archetype cluster - Spring	Greek Gods & Heroes - Robert Graves A High Wind In Jamaica - Richard Hughes Comedy and satire Why: Critical analysis of theme Archetype cluster: Summer	The Children's Homer - Padraic Colum Tragedy and epic How: Critical analysis of style Archetype cluster — Fall	**Basic Literature**
Hear music based on mythical epics: Wagner - The Ring Cycle, etc.	Listen to music with comic and satiric overtones and mythological references: Mozart - Jupiter Symphony Holst - The Planets	Listen to music with solemn, tragic, elevated, or heroic overtones. Beethoven - Eroica Symphony, Ninth Symphony Tchaikovsky - Pathetique Symphony, Romeo and Juliet Mozart - Requiem Music in ancient modes from classical times	**Music Background**
Become familiar with the adventure theme in classic illustrations from children's literature and in the fine arts from antiquity to the present.	Become familiar with comic and genre art and satirical art: Breughel, Hals, Daumier, Goya, Great political cartoonists, etc.	Become familiar with art communicating noble and tragic aspects of the human spirit Rembrandt - Later portraits Michelangelo - Bound slaves, Pieta	**Art Background**
View and analyze adventure stories on television and in films. Note conventions. Act out typical plots in skits.	Become familiar with a selected, abridged comedy by Shakespeare.	Become familiar with a selected, abridged tragedy by Shakespeare.	**Drama Background**
Orientation in time Prehistory and history Tables of geologic time and calendars of historic time Methods used by historians to investigate and validate findings	Heritage Compare classic myths with Nordic and other Germanic myths, American Indian myths, etc. Compare pre-scientific and scientific explanations of natural phenomena	Orientation in time Myths and legends versus Archeology and history Develop an outline of world history Develop mental "time machine" that can transport us to any time and place. Be able to describe milieu "visited"	**Historical Perspective**

Scope and Sequence:

		Grades K - 2		Grades
		Group I - 1st Year	Group I — 2nd Year	Group II — 1st Year
Didactic Equipment	1	Informal play with figural equipment	Formal instruction in use of figural equipment	Using task cards with figural and symbolic equipment
SOI Lessons	2	SOI Lessons: Guilford's five operations with figural content and units, classes, relations as products	SOI Lessons: Guilford's five operations with figural content and systems, transformations, implications as products	SOI Lessons: Guilford's five operations with symbolic content and units, classes, relations as products.
Shape Perception	3	Recognition of basic geometric plane and solid figures and their symmetrical properties	Free building, using figural equipment, of designs with bilateral symmetry, both two dimensional and three dimensional	Creating simple designs with bilateral symmetry on a vertical axis
Color Perception	4	Recognition of primary and secondary colors and their complements	Recognition of tertiary colors and their complements	Coloring the designs using a five or six-color range from the 12-color wheel
Spatial Orientation	5	Recognition of cardinal and intermediate points of the compass; directions in the physical world and on maps seen in both horizontal and vertical planes	Recognition, on a globe, of the equator, north pole, south pole, northern hemisphere, southern hemisphere, prime meridian/international date line, eastern hemisphere, western hemisphere	Locating, on a world map, continents and countries within the boundaries of given coordinates
Visual Adjustment	6	Perspective visualization: Actual situation Visual illusions	Perspective visualization: When you have an unobstructed view of a road or railroad tracks, etc., stretching away to the horizon, what seems to happen?	Constructing drawings with one-point perspective
Vocabulary Elements	7	Latin and Greek bases: Numbers Feelings: Love/hate, sadness, happiness, surprise, puzzlement (Use with How Do You Feel? Hats.)	Latin and Greek Bases: The five senses and sense organs The parts of the body	Latin Bases Opposite qualities; other qualities Opposite things; other things Prefixes: Antonym - producing prefixes Modification of meaning Suffixes: Adjective-forming suffixes Noun-forming suffixes Names of Monsters
Functional Grammar	8	Collecting Adjectives and Nouns: (Keep them in card files.)	Collecting Verbs and Adverbs (Keep them in card files.)	Basic Sentence Patterns Silly Sentences (see model lesson) Games: Categories (Hurwitz, pp. 108-111) Endless Word Chain (Hurwitz, pp. 118-119)

Cognitive Elements

3 - 4	Grades 5 - 6		
Group II — 2nd Year	Group III — 1st Year	Group III — 2nd Year	
Using mastery checklists with figural and symbolic equipment	Verbalizing strategies used with figural, symbolic, and semantic equipment	Creating and teaching original figural, symbolic, and semantic games	Didactic Equipment
SOI Lessons: Guilford's five operations with symbolic content and systems, transformations, implications as products	SOI Lessons: Guilford's five operations with semantic content and units, classes, relations as products	SOI Lessons: Guilford's five operations with semantic content and systems, transformations, implications as products	SOI Lessons
Creating simple designs with bilateral symmetry on a horizontal axis	Creating complex designs with quadrilateral symmetry on vertical/horizontal axes	Creating complex designs with radial symmetry on vertical/horizontal/diagonal axes	Shape Perception
Coloring the designs to demonstrate knowledge of hue, value, intensity	Constructing three, six, and twelve-color wheels using rulers, compasses, and protractors	Studying advanced color theory and optics; experimenting with after images, etc.	Color Perception
Locating, on a globe, continents and countries within given quadrants of the northern, southern, eastern, western hemispheres	Locating, on maps of various continents, cities intersected by given latitude and longitude lines	Locating, on a globe, cities intersected by given latitude and longitude lines	Spatial Orientation
Free-hand sketching of scenes with one-point perspective	Constructing drawings with two-point perspective	Free-hand sketching of scenes with two-point perspective	Visual Adjustment
Latin Bases Opposite actions; other actions Combinations of bases Prefixes: Assimilation Suffixes: Verb-forming suffixes Adverb-forming suffixes Words from Mythology (See Asimov, etc.)	Greek (1) Bases Prefixes Suffixes and combining forms Words from the physical sciences	Greek (2) Bases Prefixes Suffixes and Combining Forms Words from the Biological Sciences and Medicine	Vocabulary Elements
Sentence Expansion Games: Follow the Formula (Hurwitz, pp. 298-299) Verb Vignettes (Hurwitz, p. 310) Tom Swifties (Hurwitz, pp. 308-309)	Comparative Grammar Spanish Silly Sentences (Compare with English word order.)	Comparative Grammar Spanish Sentence Transformations Negative, Interrogative (Compare with English sentence transformations.)	Functional Grammar

Scope and Sequence:

		Grades K-2		Grades
		Group I - 1st Year	Group I — 2nd Year	Group II — 1st Year
Knowledge/ Comprehension	1	Guided group activities in basic cognitive processes: Acquisition, Translation Defining (Martin, pp. 36-39) Definition by showing example function operation context	Guided group activities in basic cognitive processes: Interpretation, Extrapolation Defining (Martin, pp. 35-36) Definition by synonym analysis synthesis negation analogy	Task card activities in basic cognitive processes: Acquisition Translation Definition, classification, and generalization (Myers, Ch. 17)
Thinking Skills	2	Classifying Classification exercises using pictures, small toys, and other objects	Classifying Classification exercises using attribute materials	Guided group activities in higher level cognitive processes using Bloom's Taxonomy: Application Analysis
General Reasoning	3	Informal hypothesizing (Glasser open-ended class meetings)	Informal investigation based on hypothesizing	Elimination logic exercises (Memphis, pp. 40-43)
Communicating	4	Communicating Description - Spatial order Narration - Chronological order	Communicating Exposition - Explaining } Logical Order Argumentation - Proving } Logical Order	Instruction in basic research techniques leading to short-term (3-week) independent study projects
Distinguishing/ Evaluating	5	Distinguishing reality from fantasy	Distinguishing fact from opinion	Distinguishing among several kinds of truth: intuitional, testimonial, mathematical, experimental (Myers, Ch. 14)

Cognitive Processes

3 - 4	Grades 5-6			
Group II — 2nd Year	Group III — 1st Year	Group III — 2nd Year		
Task card activities in basic cognitive processes: Interpretation Extrapolation Language and reality (Myers, Chs. 11-12)	Indirect uses of language (Myers, Ch. 22; Beardsley, Chs. 4-5)	Learn and play the Propaganda Game	1	Knowledge/ Comprehension
Guided group activities in higher level cognitive processes using Bloom's Taxonomy: Synthesis Evaluation	Focus on complementary thinking skills: Convergence Analysis Deduction Cause and effect Concretization	Focus on complementary thinking skills: Divergence Synthesis Induction Effect and cause Abstraction	2	Thinking Skills
Sentence-reasoning logic exercises (Memphis, pp. 35-39)	Formal deductive reasoning (Myers, Ch. 19; Beardsley, Ch. 2; Martin, pp. 72-91) Principles of Aristotelian formal logic (Johnson, pp. 6 - 10) Related fallacies	Formal inductive reasoning (Myers, Ch. 17; Beardsley, Ch. 3; Memphis, pp. 21-25) Principles of Non-Aristotelian General Semantics (Johnson, pp. 171 - 184) Related fallacies	3	General Reasoning
Instruction in refined research techniques leading to long-term (9-week) independent study projects	Teaching basic research techniques to others	Teaching refined research techniques to others	4	Communicating
Distinguishing among reports, inferences, and value judgments (Myers, Ch. 21)	Evaluating relatively simple, concrete ideas, situations, and problems 1) Considering purpose in evaluation 2) Developing appropriate standards 3) Measuring subject for evaluation against standards established	Evaluating relatively complex, abstract ideas, situations, and problems	5	Distinguishing/ Evaluating

BIBLIOGRAPHY
FOR HUMANITIES AND INTELLECTUAL EFFECTIVENESS

The books listed below proved directly or indirectly useful in the preparation of the Scope and Sequence chart as well as most of the Model Lessons in Humanities and Intellectual Effectiveness.

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Susan Sager

Taxonomy with Model Lessons

1. AFFECTIVE DOMAIN - FEELING

    - 1.1 Social Effectiveness
        - 1.1.1 Group Dynamics
            - "Brainstorming"
            - "Talking Ears"
            - "Feeling Words"
            - "Face Me"
            - "Show Me"
            - "Gesticulate"
        - 1.1.2 Leadership Skills
            - "Merlin Says"
        - 1.1.3 Discussion Skills
            - "Chaos"
        - 1.1.4 Class Meetings
            - "Boundary Breakers"
        - 1.1.5 Self-Concept Building
            - "Who? What? Why? Wheels"
            - "Mirror - Mirror"
            - "Secret Pal"
            - "Minute Friends"
            - "Rocks"
        - 1.1.6 Valuing
            - "Coat of Arms"
            - "What's In My Desk?"
            - "Hex Signs"
        - 1.1.7 Career Awareness
            - "Career Fair"
    - 1.2 Humanities
        - 1.2.1 Figurative Language
            - "Caricature and Metaphor"
        - 1.2.2 Literature
            - "Kids and Pirates"
        - 1.2.3 Background in Music, Art, Drama
            - "Monster Mania"
        - 1.2.4 Historical Perspective
            - "Roots and Branches"

2. COGNITIVE DOMAIN - THINKING

    - 2.1 Intellectual Effectiveness
        - 2.1.1 Instruction in Perceptual/Conceptual Elements
            - 2.1.1.1 Didactic Equipment and Games
                - 2.1.1.1.1 Figural
                    - "Pattern Pending"
                - 2.1.1.1.2 Symbolic
                    - "Clue"
                    - "Anagrams"
                    - "Number Hunt"
                    - "Magic Square"
                - 2.1.1.1.3 Semantic
                    - "Alphabet Appetite"
                    - "Fast Freddie Fights Fires"
                    - "Kate"
            - 2.1.1.2 SOI Lessons
                - 2.1.1.2.1 Figural
                    - "Thinking With Shapes"
                - 2.1.1.2.2 Symbolic
                    - "Thinking With Symbols"
                - 2.1.1.2.3 Semantic
                    - "Picture Perfect"
            - 2.1.2.3 Shape Perception
                - 2.1.1.3.1 Basic Plane and Solid Geometric Figures
                    - "Polygons"
                - 2.1.1.3.2 Symmetyry
                    - "Snakes and Swans"
            - 2.1.1.4 Color Perception
                - 2.1.1.4.1 Hue
                    - "Rainbow Colors"
                - 2.1.1.4.2 Intensity - pure/neutral range
                    - "The Dull and Bright of It!"
                - 2.1.1.4.3 Value - light/dark range
                    - "The Dark and Light of It!"
            - 2.1.1.5 Spatial Orientation
                - "Dizzy Directions"
            - 2.1.1.6 Visual Adjustment
                - 2.1.1.6.1 General Introduction to Perspective
                    - "The Magic Window"
                - 2.1.1.6.2 Linear Perspective
                    - "The Incredible Vanishing Point"
            - 2.1.1.7 Vocabulary Elements From Latin and Greek
                - "Opposite Action Verbs"
            - 2.1.1.8 Functional Grammar
                - "Silly Sentences"

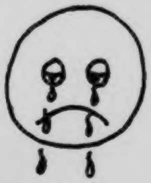
- 2.1.2 Instruction in Using Basic Processes
  - 2.1.2.1 Acquisition, Translation, Interpretation, and Extrapolation of Basic Knowledge
    "Lord and Lady"
  - 2.1.2.2 Application of Specific Higher Level Thinking Skills to Knowledge
    "Life"
  - 2.1.2.3 General Reasoning
    - 2.1.2.3.1 Hypothesizing
      "Hypothesizing"
    - 2.1.2.3.2 Elimination Logic
      "Mini-Mystery"
    - 2.1.2.3.3 Deductive Reasoning
      "Deduction"
    - 2.1.2.3.4 Principles of Aristotelian Formal Logic
      "The Big A"
    - 2.1.2.3.5 Inductive Reasoning
      "Induction"
    - 2.1.2.3.6 Principles of Non-Aristotelian General Semantics
      "The Big Non-A"
  - 2.1.2.4 Communicating
    - 2.1.2.4.1 Description
      "Description"
    - 2.1.2.4.2 Narration
      (No lesson included)
    - 2.1.2.4.3 Exposition
      "Exposition"
    - 2.1.2.4.4 Argumentation
      (No lesson included)
  - 2.1.2.5 Evaluating
    - 2.1.2.5.1 Distinguishing Reality From Fantasy
      (No lesson included)
    - 2.1.2.5.2 Distinguishing Fact From Opinion
      (No lesson included)
    - 2.1.2.5.3 Distinguishing Among Several Kinds of Truth
      "Several Kinds of Truth"
    - 2.1.2.5.4 Distinguishing Among Reports, Inferences, and Value Judgments
      "Reports, Inferences, and Value Judgments"

- 2.2 Creativity
  - 2.2.1 Experience in multiple talent Areas
    - 2.2.1.1 Basic Creativity: Fluency, Flexibility, Originality
      "Silent Spaghetti"
      "Marshmallow Madness"
    - 2.2.1.2 Planning: Elaboration, Sensitivity to Problems, Organizing Abilities
      "Jazzy Junk"
    - 2.2.1.3 Communication: Expressional Fluency, Associational Fluency, Word Fluency
      "Thimble Thoughts"
    - 2.2.1.4 Forecasting: Conceptual Foresight, Penetration, Social Awareness
      "What If...?"
    - 2.2.1.5 Decision Making: Experimental Evaluation, Logical Evaluation, Judgment
      "Bumper Sticker Serenade"
  - 2.2.2 Independent Studies Using a Variety of Cognitive Skills and Creative Talents
    "Searching and Sharing"
    "Plan for Independent Study"

3. PSYCHOMOTOR DOMAIN - DOING

- 3.1 Physical Effectiveness
  - 3.1.1 General Movement Thinking Activities
    - "Push Me-Pull You"*
    - "Mapping Acrobats"*
    - "Hop-Skip-Jump"*
    - "Quadrant Man/Quadrant Woman"*
  - 3.1.2 Discriminative Thinking Activities
    - "Jumping Eyes"*
    - "Tongue Thought"*
    - "The Eyes Have It"*
    - "The Great Eye Hunters
  - 3.1.3 Visual Thinking Activities
    - "Parquetry"*
    - "Pegboard"*
    - "Hodge Podge"*
  - 3.1.4 Auditory Thinking Activities
    - "Man or Beast"
  - 3.1.5 Hand Thinking Activities
    - "Thinking Fingers"*
  - 3.1.6 Graphic Thinking Activities
    - "Callgraphy"
  - 3.1.7 Techniques of Relaxation Activities
    - "Magic Movements"
  - 3.1.8 Self-Expression Through Movement
    - "Beat of the Drum"
  - 3.1.9 Mind/Body Integration Activities
    - "Concentration-Espanol"
- 3.2 Recreational Integrative Activities
  - 3.2.1 Games and Equipment
    - "List of Games and Equipment"
  - 3.2.2 Arts and Crafts
    - "Kaleidoscopic Symmetry"
  - 3.2.3 Special Projects in Art, Dance, Drama, Music
    - "American Indian Dances"
    - "Bleking"
    - "7-Jumps"

*These lessons were adapted from Thinking Goes to School by Hans G. Furth and Harry Washs, (New York: Oxford University Press, 1974.). They could not be included in our guidebook because permission had not been received to use them before our publication deadline.



Concept/Competency
(idea) (knowledge/skill)

A MODEL FOR SETTING OBJECTIVES AND IDENTIFYING BEHAVIORS

This is a statement of the concept, idea, understanding, knowledge, and competency or skill the student should have as a result of experiencing this lesson.

LEVEL grades TIME suggested time

MODEL OF CURRICULUM UNITS

ENTRY CONCEPTS:

This is a summary statement of the entry behavior of kind of background the student should possess.

MATERIALS:

TEACHER TASKS:

INTRODUCTION:

LESSON DEVELOPMENT:

Recall
Application
Analysis
Synthesis
Evaluation

STUDENT

ENABLING BEHAVIORS:		LEARNINGS:
The student:	*In order to:*	
Physical Skills	Thinking Behavior	Specific learning explored
End goal or instructional objective.		

DETAILED
EXPLANATION OF FORM

Concept/Competency

(idea or knowledge/skill)

This is a statement of the concept, idea, understanding, knowledge, and competency or skill the student should have as a result of experiencing this lesson.

LEVEL grades TIME A suggested guide of approximate time

ENTRY CONCEPTS:

This is a summary statement of the entry behavior or kind of background the student should possess. It may be written as a statement or as a behavior, beginning with "Ability to---".

MATERIALS:

List materials the teacher will need to prepare. It is often assumed the teacher will have access to standard classroom equipment such as tables, chairs, chalkboard, etc.

TEACHER TASKS: (What the teacher does)

INTRODUCTION: Teacher tells, reads, asks, describes, shows, etc. in order to provide an experience for children.*

LESSON DEVELOPMENT:

Activities move generally (on Bloom's Taxonomy) from:

- Recall
- Application
- Analysis
- Synthesis
- Evaluation

Each lesson may vary, interchange, or stress certain categories.

*It is to be expected that the students will work toward attainment of the stated goals and activities in accordance with their ability and maturity levels.

STUDENT

ENABLING BEHAVIORS:		*LEARNINGS:*
The student:	*In order to:*	
(physical skills) speaks moves plays listens reads writes	(thinking behavior) recall and understand apply analyze synthesize evaluate (Bloom or Guilford terms)	Brief statement of specific learning explored or discovered.

End Goal or Instructional Objective

It is expressed in operational terms in the form: "Given the opportunity to ________, the student will ________" or "As the result of experiences with the above process, the student will (know, demonstrate) ____________."

Curriculum Units

Affective

Brainstorming

Concept/Competency

GROUP DYNAMICS

Student will learn group processing while using deferred judgment.

Developed by: Klonda Ball

LEVEL K - 4 TIME *20 min. - 1 hour*

AFFECTIVE: SOCIAL EFFECTIVENESS

ENTRY CONCEPTS:
--Increase awareness of own capabilities in contributing to group process
--Ability to defer critical judgment

MATERIALS: Blackboard, chalk
Written rules for brainstorming
Paper for small group work

TEACHER TASKS:

INTRODUCTION: Call the children into a circle. Explain the rules for brainstorming, saying, "This is the way big companies solve their problems or develop new products. What can we come up with? Explain rules of brainstorming.

LESSON DEVELOPMENT:

1. Select a chairperson and recorder (older children can work together in smaller groups).
2. Students "brainstorm" the characteristics of a good leader.

STUDENT

ENABLING BEHAVIORS: *The student:*	*In order to:*	LEARNINGS:
listens	recall	rules of brainstorming
prepares	apply	brainstorming to problem .
participates	investigate	possible problem solutions.

3. Discuss the characteristics and decide as a group which are more relevant.

EVALUATION:

Discuss the Brainstorming experience and the control necessary to defer judgment of others'suggestions.

Given an opportunity to experience brainstorming the student will discover an operational tool for improved idea production.

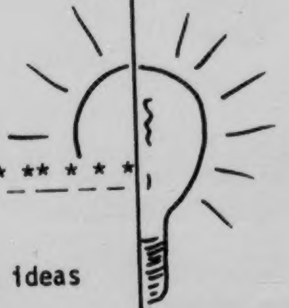
RESOURCE:

Based on an idea postulated by Alex F. Osborn in 1948 and since developed by many others.

re-arranges solutions

create

meaningful problem solutions.



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BRAINSTORMING

1. Think of as many ideas as you can.
2. Call out every idea that comes into your head; the more the better.
3. Add on ideas or combine two or more.
4. Do not criticize any idea, your's or anyone else's.

* * * * * * * * * * * * * * * *

TALKING EARS

Developed by: Klonda Ball

Concept/Competency

GROUP DYNAMICS

Learning to listen can be accomplished by learning how poorly we listen--and talk.

LEVEL 1 - 4 TIME Approx. 15 - 20 min.

SOCIAL EFFECTIVENESS

AFFECTIVE

ENTRY CONCEPTS:

--Ability to share whispering messages.
--Ability to cooperate with a group in resolving problems

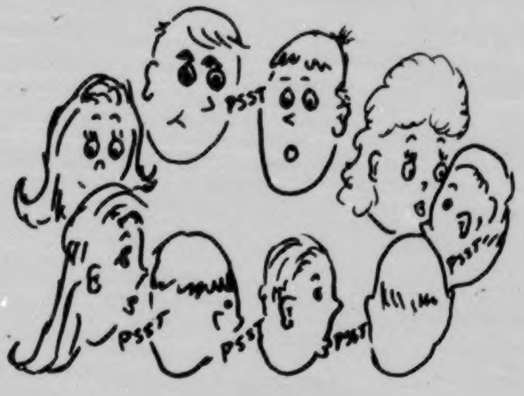
MATERIALS: Large ear with mouth for talking as display material

TEACHER TASKS:	STUDENT ENABLING BEHAVIORS: *The student:*	*In order to:*	LEARNINGS:
INTRODUCTION: Say, "Today we are going to play a listening game but we will talk, too--you'll like "talking ears."			
LESSON DEVELOPMENT:			
1. Arrange children in a circle in groups of five. Whisper a simple message in one student's ear; he/she returns to the circle and whispers the message to the person on his/her left. The message continues around the circle until everyone has heard it BUT the starter.	participates	restate	message delivered by the receiver.

2.	When the groups have finished passing the messages, ask the message keeper to repeat what he/she heard. Then ask the message starter to repeat what he/she heard and compare discrepancies.	compares messages	discover	poor communication of whispered messages
3.	Repeat the activity with more complicated messages. Then discuss the experience:	participates again	translate	more complicated messages.
	--Have you ever been involved in a message that got mixed up? What happened? How did it feel? Did the message ever get straightened out? --What causes messages to get twisted? --Can you think of a situation when it would be extremely important to keep a message straight?	discusses	discover	causes of poor communication.
4.	Repeat the activity. Stress the need for accuracy. Urge the students to do whatever they must do to assure that the message will be passed correctly. Note their solutions. After several attempts, discuss their new solutions.	participates	conduct	more effective communication patterns--new solutions to the problem.

EVALUATION:

The students try the recommendations to determine the most effective solution.



Given the opportunity to perform talking and listening skills, the student will develop concentrated listening and demonstrate effective communication skills.

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FEELING WORDS

Developed by: Klonda Ball

Concept/Competency

GROUP DYNAMICS

There are a variety of words to express each feeling we have.

LEVEL 1 - 4 TIME *Approx. 30 min.*

AFFECTIVE: SOCIAL EFFECTIVENESS

ENTRY CONCEPTS:

- --Ability to pantomime feeling words
- --Ability to cooperate in group activity of guessing

MATERIALS:

Stop watch or clock with second hand
Papers with feeling words in a box

TEACHER TASKS:	STUDENT ENABLING BEHAVIORS: *The student:*	*In order to:*	STUDENT LEARNINGS:
INTRODUCTION: Say: "Some words in our vocabulary express our feelings so well the words almost reach out and grab you."			
LESSON DEVELOPMENT:			
1. Divide the class into two teams. No. 1 Team sends the first pupil to draw a word from the box. He then must make up a descriptive phrase or sentence which communicates the word without saying the word itself.	reads	interpret	word message to be delivered.
	composes a sentence	illustrate	word to be discovered.

127

127a

Synonyms, gestures, postures and facial expressions may be used but the feeling word must not be spoken.

EXAMPLE: The word may be joy. The student may say, "I am so filled with happiness I am almost ready to burst."

2. The guessing team must identify the word within 30 seconds. Equivalent words are acceptable, i.e. joyous for joy.

3. If a player uses the actual word, he/she loses that turn. When a team guesses the word, they win 1 point. If the player's team does not guess accurately in 30 seconds, the opposing team gets a chance to guess. The teacher calls time and keeps the team scores and judges the equivalent words.

EVALUATION:

The teams take alternate turns. The highest scoring team wins.

A LIST OF FEELING WORDS:

anger
grief
loneliness
shame
joy
fear
delight

boredom
envy
guilt
jealousy
sadness
love
hate

compassion
happiness
pain
respect
horror
disgust
pride

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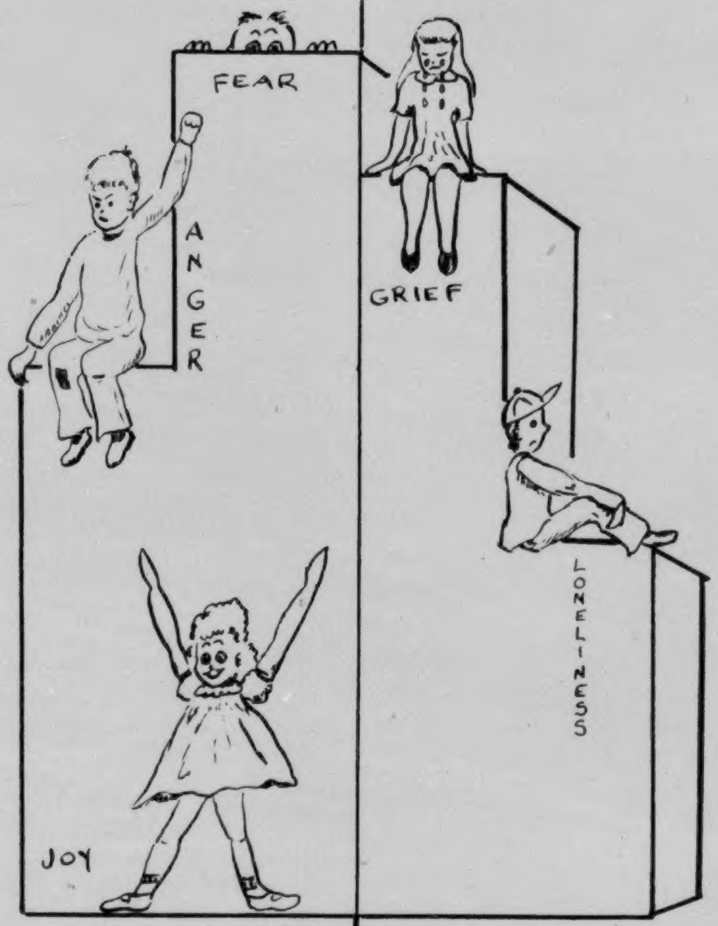
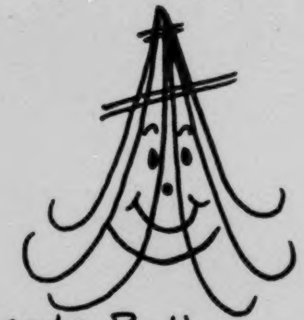


Given a list of feeling words, the student will expand his affective vocabulary by acting out his choice of equivalent words.

FACE ME



Concept/Competency

GROUP DYNAMICS

Facial expressions are a non-verbal form of communication.

Developed by: Klonda Ball

LEVEL K - 2 TIME 1 hour

AFFECTIVE: SOCIAL EFFECTIVENESS

ENTRY CONCEPTS:

--Ability to relate feelings to facial expression

MATERIALS:

Pencil
Paper
Ditto sheets of statements and faces

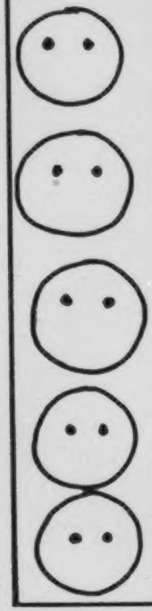
TEACHER TASKS:	*STUDENT* ENABLING BEHAVIORS: *The student:*	*In order to:*	LEARNINGS:
INTRODUCTION:			
Recite a variation of the old nursery rhyme: "Sticks and stones will break my bones, But pulling faces won't hurt me!" Discuss how we can send messages with our faces if we choose--"Sometimes our feelings show on our face even if we don't know it."	listens	recognize	feelings show in our faces.
LESSON DEVELOPMENT:			
1. Ask children to complete the faces on both sides of the statements (ditto) so that they have illustrated the statements.	draws in the faces	relate	feeling to facial expressions.

When the children have finished drawing, (10 minutes), ask:
--"Was it easier to show the expression by drawing the eyes or mouth?"
--"Why are our mouths usually more expressive than our eyes?"
--"In our drawings we have been expressing feelings through facial expressions. What are some other ways to express feelings?"

discusses

analyze

the most difficult aspects of relating feeling to expression



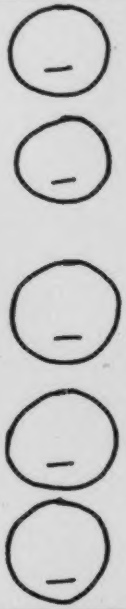
I'm happy!
I really like that!

I feel good!
I like that a little.

I don't know.
I don't have any feelings
in particular.

I'm not pleased.
I don't feel good about that.

I hate it!
I really dislike it!



Teach children the game, "Here Comes An Old Woman" using facial expressions rather than nonsense instructions. Those not "it" must frown while "it" tries to make them laugh.

participates

experience

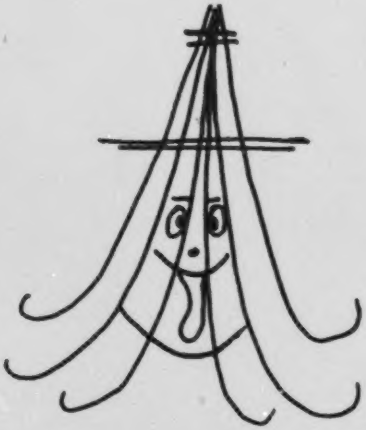
trying to frown while another attempts to make us laugh with a facial expression

4. Discuss how children felt when they could finally smile; the kinds of things that caused them to smile or frown; how it feels to see someone frowning.	shares	examine	the experience of forced smiling or frowning.
5. Select pupils in groups of three to act out facial expression found in a picture by making a story about it.	acts out	compose	skits using specific facial expressions.

EVALUATION:

Have an ugly face contest. Take pictures of children with Polaroid camera. Have them write a short story about the face.

Given the opportunity to perform and respond to facial expressions, the student will be able to relate the feelings communicated to possible causes.



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"If the aim of intellectual training is to form the intelligence rather than to stock the memory, and to produce intellectual explorers rather than mere erudition, then traditional education is manifestly guilty of a grave deficiency."

--Jean Piaget

Show Me

Developed by: Klonda Ball

Concept/Competency

GROUP DYNAMICS

Effective non-verbal communication is a combination of facial, gesture and postural expression.

LEVEL 1 - 4 TIME 45 min.

AFFECTIVE: SOCIAL EFFECTIVENESS

ENTRY CONCEPTS:

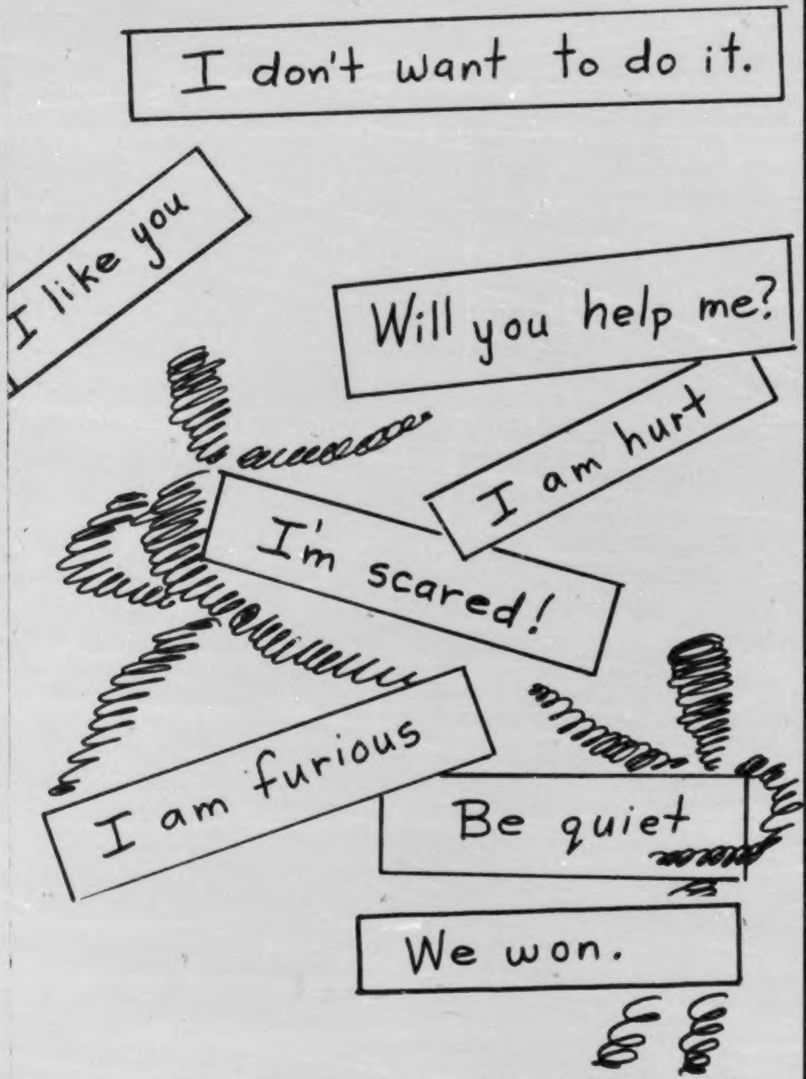
--The ability to combine facial expression, gestures and postures to communicate feeling

MATERIALS: Stop watch or clock with second hand
Messages written on slips of paper in small box, hat or can

TEACHER TASKS: INTRODUCTION:

Say, "Today we are going to communicate without words. You must SHOW ME what you're trying to say."

LESSON DEVELOPMENT:	STUDENT ENABLING BEHAVIORS: The student:	In order to:	LEARNINGS:
1. Divide class into two charade teams. A person from team #One will select a message, give it to the teacher, then "act-out" the message without speaking.	reads message	distinguish	what must be relayed by pantomime.
Each player is allowed one minute.	performs	improvise	message for pantomiming.
The team tries to guess the message and, if they guess correctly within the time limit, 1 point is scored.	guesses	predict	message being pantomimed.
2. The first player from team #Two draws a message and the procedure is repeated. The teacher keeps score and the time.	reads message	distinguish	what must be pantomimed.
EVALUATION:			
The first team to score seven points wins the game.	performs	create	non-verbal message.


I don't want to do it.
I like you
Will you help me?
I am hurt
I'm scared!
I am furious
Be quiet
We won.

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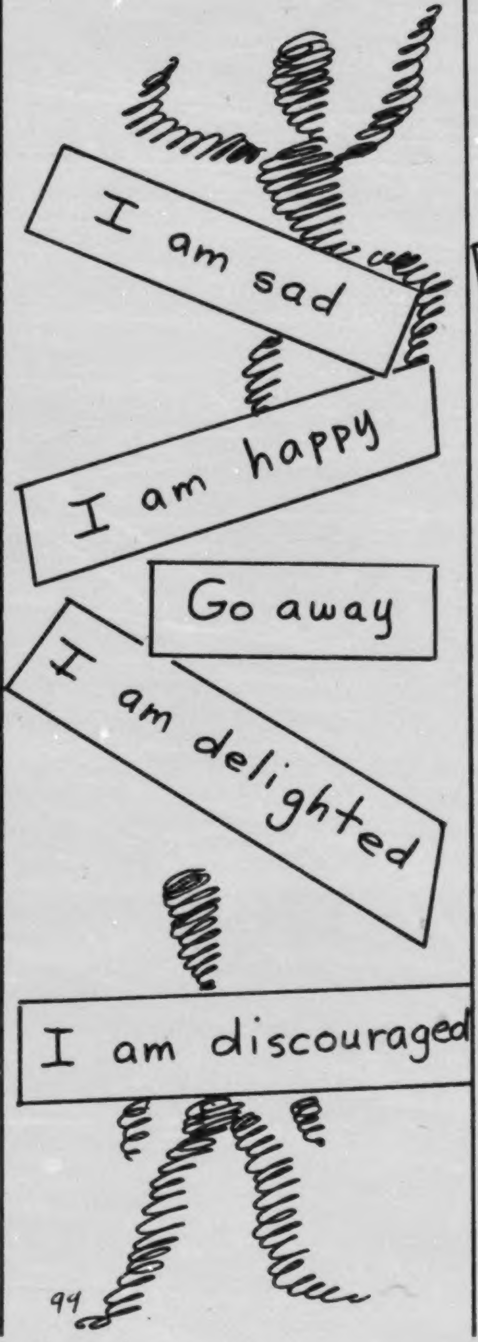
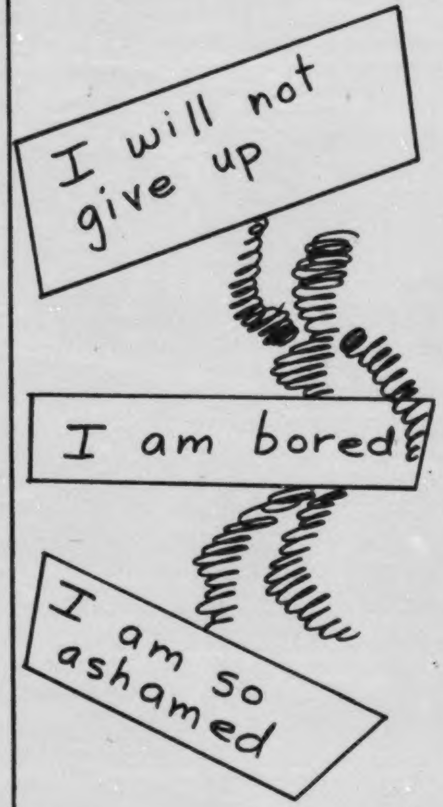

I am sad
I am happy
Go away
I am delighted
I am discouraged


I will not give up
I am bored
I am so ashamed

Given the opportunity to play charades, the student will demonstrate the ability to communicate non-verbally.

GESTICULATE

Developed by: Klonda Ball

Concept/Competency

GROUP DYNAMICS

Gesticulating is a simple form of non-verbal communication.

LEVEL K - 4 TIME 30 *min.*

SOCIAL EFFECTIVENESS

AFFECTIVE:

ENTRY CONCEPTS:

--Ability to demonstrate non-verbal communication through gesturing
--Ability to utilize non-verbal communication to tell a story

MATERIALS:

Recording of the song, "Gesticulate" from the musical, Kismet.

TEACHER TASKS:

INTRODUCTION:

Play the song, "Gesticulate" from the musical, Kismet.

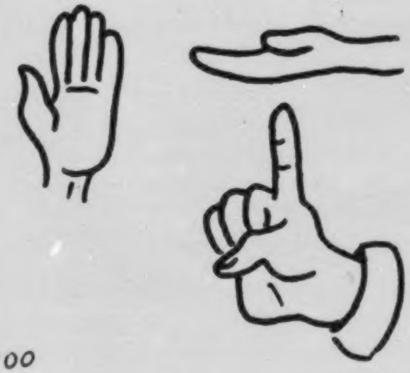
LEARNING DEVELOPMENT:

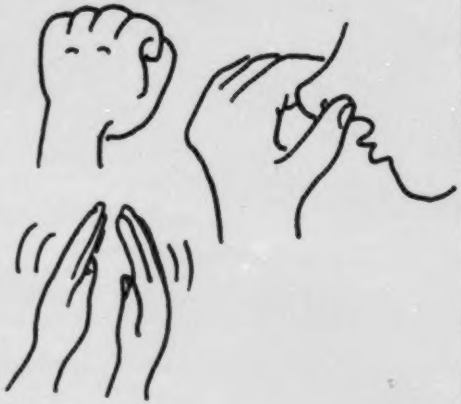
1. Have the students define the term "gesture". Ask: "What does gesticulate mean?"

2. Ask students to volunteer to act out simple gestures used in our society. These may include:
   --handwaving - "hello"
   --arm extended palm at right angle - "stop"
   --finger to lips - "be quiet"
   --cupping an ear - "I can't hear"
   --upturned palm - "give it to me"
   --A.O.K. sign - thumb and finger forming a circle, other three extended
   --beckoning with forefinger - "come here"
   --fingers crossed - "good luck".

STUDENT

ENABLING BEHAVIORS:		LEARNINGS:
The student:	*In order to:*	
defines word	describe	actions of gesturing.
performs	apply	non-verbal gestures in communicative form.



Gesticulate Class guesses at what gestures mean.			
3. Next ask the students, one at a time, to demonstrate these gestures to the class: --clenched fist - "anger" --blowing a kiss -"affection" --clapping hands -"appreciation" --shaking finger -"displeasure" --stroking an index finger with other - "shame" --patting stomach -"enjoyment" --holding nose -"displeasure" --tapping fingers -"boredom" --fingers in ear -"not want to hear." Discuss with class the feelings that each gesture communicated.	gestures 	model	unknown gestures while others guess
4. Then ask: "Which gestures communicate negative feelings?" "Which positive?" "Can anyone demonstrate other gestures they use or have noticed other people using?"	investigates	analyze	non-verbal communications they have experimented with
EVALUATION: Ask for volunteers to "gesticulate" a story. This may go on for several days.	acts out	originate	a non-verbal performance to share with the group

Given an opportunity to communicate non-verbally, students will learn to identify the feelings they express with the gestures they use.

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MERLIN SAYS

DEVELOPED BY: KLONDA BALL

Concept/Competency

LEADERSHIP

It is important to each student to experience his/her own personal significance and impact on the world--to feel that what he/she does can make a difference.

LEVEL K - 4 TIME 1 hour

SOCIAL EFFECTIVENESS

ENTRY CONCEPTS:

--Ability to make independent decisions

--Ability to involve a group in creative fantasy that is uniquely each child's own

MATERIALS:

Book about King Arthur and Merlin

TEACHER TASKS:

AFFECTIVE:

INTRODUCTION:

Read description of Merlin from a book about King Arthur's Court.

LESSON DEVELOPMENT:

1. Say, "Now we are going to play a game like Simon Says, only this game will be more magical. It is called "Merlin Says" and Merlin has the power to turn everyone into animals, cars, ballet dancers, waddling ducks or howling wolves.

STUDENT		
ENABLING BEHAVIORS:		LEARNING
The student:	*In order to:*	
listens	observe	a demonstratio of structure a rules of the g to be played.

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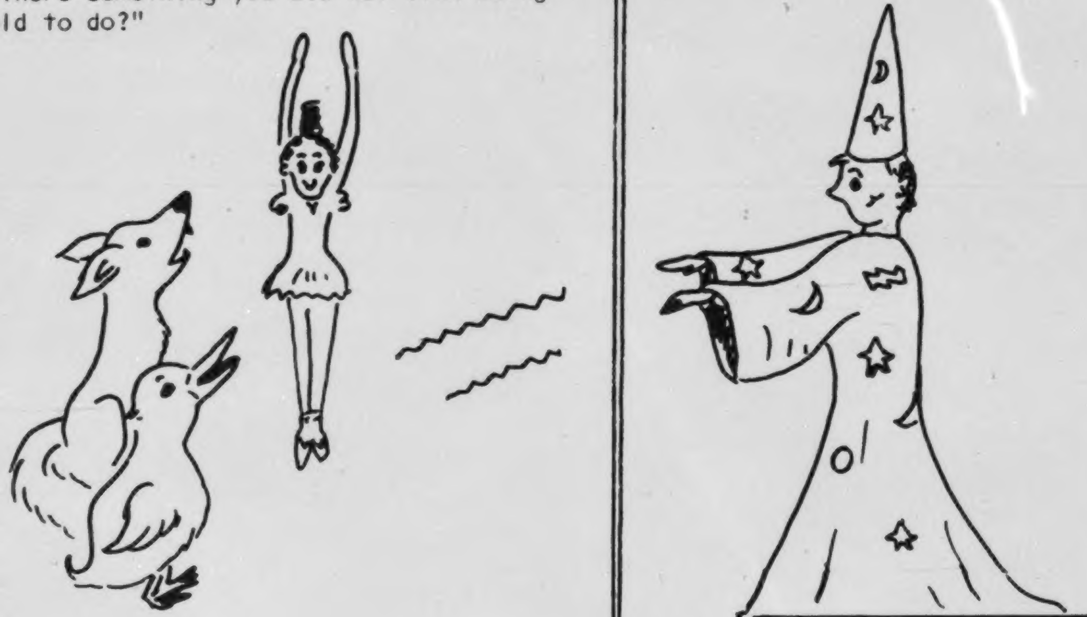
The teacher begins the game by calling, "Merlin Says all boys to this side of the room, all girls to that side."			
2. Choose a child to be Merlin. Allow the child to direct the group for four minutes--then let the child choose a child to replace him/her. Give every student a turn in several sessions of activity.	directs	experience	strength in self validated by experiencing self as the Magical Merlin.
EVALUATION:			
Discuss the experiences of power. "How does it feel to be powerful?" "Was there something you did not like being told to do?"	participates	relate	feelings about wielding or yielding power.



Given an opportunity, each child, instead of seeing himself/herself as insignificant, gets a chance to express his/her powerful self in a creative manner.

Concept/Competency

DISCUSSION SKILLS

Decision-making includes responsible action in identifying alternatives, selecting the alternatives most consistent with stated goals and taking steps to implement a course of action.

Developed by: Klonda Ball

LEVEL 3 - 4 TIME 45 minutes

AFFECTIVE: SOCIAL EFFECTIVENESS

ENTRY CONCEPTS:	MATERIALS:
--Ability to communicate and interact with others	Pencils and paper

TEACHER TASKS:	STUDENT ENABLING BEHAVIORS: *The student:*	*In order to:*	LEARNINGS:
INTRODUCTION: Seat students in a circle. The teacher gives ONLY the following instructions:			
"You are to calculate the average height in feet and inches of the members of this group. If a member does not know his exact height, he may give an estimate. The group must agree on the answer and appoint someone to submit it to the teacher." (A variation might involve calculating average weight.)	listens	determine	the procedure to be used in calculating average height.

Chaos

LESSON DEVELOPMENT:

1. Repeat the directions until all students understand them. Then move away and do not talk to or interfere with the group until the problem is solved.	interacts	organize	for group problem-solving.
2. Repeat the game several times until the group learns to quickly organize itself.	focuses on task	examine	how to better organize the group for problem-solving.

EVALUATION:

Though the problem may have been solved, the chaos may still have existed. Help the students understand ways of organizing by discussing:

What were you trying to achieve?
Did you look for alternatives?
How did you decide what alternative to use?
What slowed the group down?
What problems did you have in organizing?
Getting together?
Did anyone take over the leadership?
Is this good or bad?
Was a leader needed?
What responsibility did each member have?
How could the group solve the problem faster next time?

Given a problem-solving task, the student will develop the ability to cooperate with a group for the purpose of organizing problem-solving strategies.

BOUNDARY BREAKERS

Concept/Competency

CLASS MEETINGS

Specific questions provide opportunities for one to express particular ideas and attitudes.

Developed by: Carole Draper

LEVEL K - 6 TIME 15 minutes

AFFECTIVE: SOCIAL EFFECTIVENESS

ENTRY CONCEPTS:

--Ability to express oneself verbally

MATERIALS:

NONE

TEACHER TASKS:

INTRODUCTION:

The teacher will explain the purpose of Boundary Breakers: the creation of an awareness of self and others by the use of questions which tend to go beyond superficial depth; to create a sense of belonging; to bring people closer together in group situations.

The class members are to sit in a tight circle on the floor, if carpeted, or in chairs.

A thought-provoking question is "thrown out" to the group. Each person is to answer according to how he/she interprets the

STUDENT		
ENABLING BEHAVIORS:		LEARNINGS:
The student:	*In order to:*	
listens	understand	objectives of Boundary Breakers.

question. There is no discussion or debate. Identical responses may be made if the response is an honest one for the participant.

Each person is to answer the question. The first time around the circle a person may "pass" if he/she has no response at that time. However, the next time, that person must respond if at all possible. Explain to the students that the key word is LISTEN. As each person answers the others need to collect his/her responses in their heads in order to develop an idea of each person.

LESSON DEVELOPMENT:

1. After explaining the rules for Boundary Breaking, the teacher will have the class members form a circle.
2. The teacher will then proceed to throw out a particular question. Each child is then expected to answer the given question, first or second time around.

   Samples of these types of questions are:

   1. What color is love?
   2. If you could be a flower, what flower would you be?
   3. If you could be a color, what color would you be? Why?
   4. If you could visit anywhere in the world for one day, where would you visit?
   5. If you could speak with anyone in the world, living or dead, who would you visit with?
   6. What is the title for the last book you read?
   7. If you could smash one thing and only one thing, what would you smash?

listens	comprehend	rules for Boundary Breakers.
listens to responses	develop	awareness of others.
forms circle	arrange	self in relation to other class members.
answers question	verbalize	feelings and ideas on specific questions.

EVALUATION:

The teacher will ask questions like the following:

What did you learn about yourself today?

Which person did you learn most about today, in this session?

Which person do you feel is the most like you?

Which person do you feel is the least like you?

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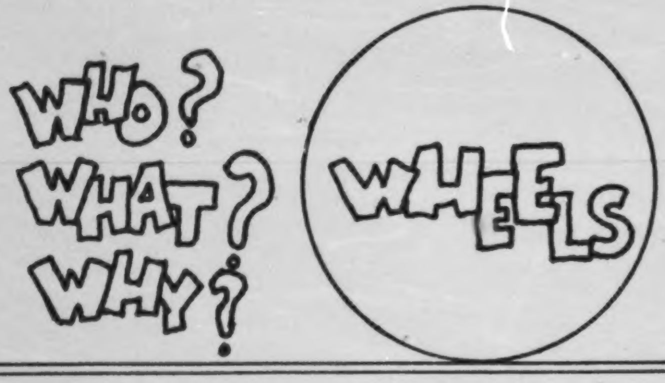
listens and responds	consider	insights gained by participating in a Boundary Breaker session.

Given the opportunity to respond to a specific question, the student will be able to express verbally his/her particular feelings and ideas.

To live is to have problems, and to solve problems is to grow intellectually. It is probably safe to say that at no time has a larger number of informed and otherwise intellectually able individuals lived on this planet, yet the problems to be solved seem almost overwhelming -- how to keep the peace, how to feed and clothe an expanding population, how to keep the population from expanding too rapidly, and how to educate it. Education in the more enlightened countries has been rather successful in transmitting to younger generations the accomplishments of older generations. But. ...teaching has been much too authoritative. It has not given the younger generation instruction in how to use information in creative ways, or even the opportunity to do so in many cases. Creative education, on the other hand, aims at a self-starting, resourceful, and confident person, ready to face personal, interpersonal and other kinds of problems. Because he is confident, he is also tolerant where there should be tolerance. A world of tolerant people would be one of peaceful and cooperative people. Thus creativity is the key to education in its fullest sense and to the solution of mankind's most serious problems.

J. P. Guilford


WHO?
WHAT?
WHY?
WHEELS

Concept/Competency

SELF CONCEPT

Description of one another helps each individual to know himself and others better.

Developed by: Klonda Ball

LEVEL 3 - 4 TIME 45 min.

AFFECTIVE: SOCIAL EFFECTIVENESS

ENTRY CONCEPTS:

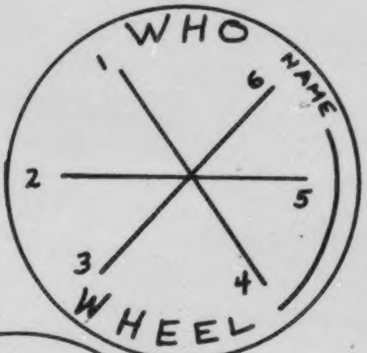
- --Ability to evaluate others openly
- --Ability to trust another in paired-off relationship

MATERIALS: Three 6" circles for each child - WHO, WHAT, WHY
Pencils

TEACHER TASKS: INTRODUCTION:
Share large wheels with children: "Today we are going to help one another get to know ourselves better."

TEACHER TASKS	STUDENT ENABLING BEHAVIORS: *The student:*	 *In order to:*	 LEARNINGS:
LESSON DEVELOPMENT:			
1. Have students pair off with a friend. Each puts his name on the WHO, WHAT and WHY wheels.	pairs off	identify	chooses a partner he/she trusts to work with
2. Students trade WHO wheels, then each writes five adjectives which describe their partner. For example: friendly, outgoing, bookwormish, athletic, outdoorsy.	trade wheels	produce lists	observe characteristics of partner
3. Then return wheels to original owner who chooses one characteristic he is surprised at or one he disagrees with--places a star near it and gives both the WHO and WHY wheels back to his/her partner to elaborate on.	reads	react	asks for verification of perceived talents or characteristics

4. The partner next takes the WHY wheel and gives reasons WHY that particular adjective was chosen to describe his/her partner.	surveys	analyze	understand reasons for making choices
EVALUATION:			
Finally each person takes his own WHAT wheel and writes ways to change, cultivate or enhance the trait. THIS IS PERSONAL AND IS NO LONGER TO BE SHARED--IT IS FOR ONE'S SELF ONLY.	reviews	synthesize	traits in order to choose how to change


WHO
NAME
1
2
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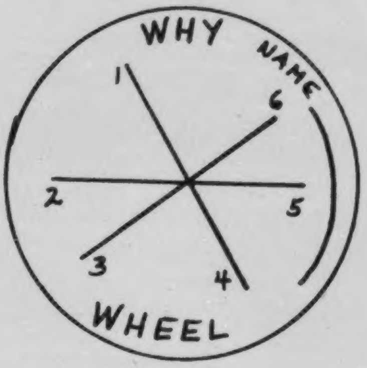
5
6
WHEEL


WHY
NAME
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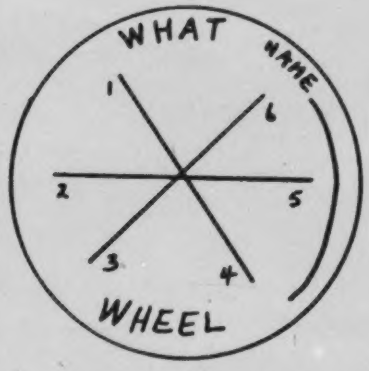
WHEEL


WHAT
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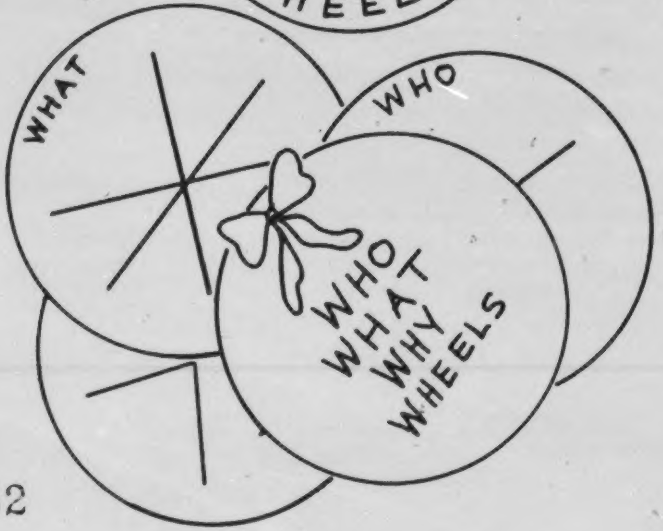
WHEEL


WHAT
WHO
WHO
WHAT
WHY
WHEELS

Given the opportunity to talk with another individual, the student will be able to describe that person and be able to justify that description, as well as learn more about himself.

MIRROR
MIRROR

Developed by: Klonda Ball

Concept/Competency

SELF-CONCEPT

When we focus our assets, we build a strong feeling of self worth.

LEVEL K - 4 TIME 45 minutes

AFFECTIVE: SOCIAL EFFECTIVENESS

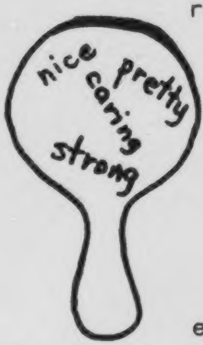
ENTRY CONCEPTS:
- --Ability to express a positive statement about self
- --Ability to share a positive statement about a classmate (no negative statements allowed)

MATERIALS:
Story of Snow White;
Mirror with handle;
Large decorative mirror for hanging in classroom;
Cardboard mirror shape for each student

TEACHER TASKS:	STUDENT ENABLING BEHAVIORS: The student:	In order to:	LEARNINGS:
INTRODUCTION: Introduce the strategy by recalling or reading the story of Snow White and the Magic Mirror. LESSON DEVELOPMENT:			
1. Pass a framed mirror with a handle around the class as they sit in a circle. Explain that you have a magic mirror, too, but that with this one you must say. . . .	listens	experience that	the game will be one of looking for positive attributes in self.

"Mirror, mirror, on the wall,
Who's the fairest one of all?
Mirror, mirror, say what you see,
Say what you like the best about me."

2. Each student holds the mirror up to his ear as if the mirror were talking to him.	speaks and repeats rhyme	reinforce	recall of rhyme in order to play game.
3. He/she puts the mirror down.	thinks	decide	what he/she likes best about himself.
4. The mirror is passed on and each student shares a positive attribute with others or passes.	reports	share	what the mirror has said it "likes best" about the student.
5. Variations might include a neighbor listening for, then responding to, a friend's question.	listens	speak	stating what he likes best about his/her friend.
6. Make mirror shapes from cardboard. Place one on each desk. Have every student go around the classroom and write one positive compliment about every other student in the group on the other student's mirror. Those unable to write may attempt verbal sharing.	labels	reflect	positive attributes he/she sees in others.



EVALUATION:

Students gather in a group to discuss how it feels to be told something "good" about oneself.	shares reaction	experience	how others felt trying to accept positive compliments about themselves.

From PERSONALIZING EDUCATION: Values Clarification and Beyond by Leland W. Howe and Mary Martha Howe, Copyright © 1975, Hart Publishing Company, Inc.

Given an opportunity to receive and give positive compliments, which may be difficult to accept in our society, the student will develop an understanding that it is all right to be complimented and learn how to deal with it.

Secret Pal

Developed by:
Klonda Ball

Concept/Competency

SELF CONCEPT

Positive supportive relationships in the classroom build a climate of acceptance and trust.

LEVEL K - 4 TIME *45 minutes*

AFFECTIVE: SOCIAL EFFECTIVENESS

ENTRY CONCEPTS:

--Ability to give positive reinforcement
--Awareness of difficulty in keeping a secret

MATERIALS:

1 basket or box
Folded papers with childrens' names written on them

TEACHER TASKS:

INTRODUCTION:

Seat students in circle and explain the purpose and procedure of activity.

LESSON DEVELOPMENT:

1. Have students draw names from a basket. The name each student draws is his or her Secret Pal for the week. Students do not reveal their Pal to anyone.

STUDENT

ENABLING BEHAVIORS: *The student:*	*In order to:*	LEARNINGS:
draws name	identify	who Secret Pal is.

SANDRA
BILL
KIM
DAVID

Secret Pal

2. During the week the student MUST give at least five special things to his Secret Pal without being discovered: a compliment a typed note a flower a poem, picture or small gift.	writes types sends creates chooses	give	gift of acceptance to unknown friend when receiving nothing in return.
3. At the end of the week students reveal their Secret Pal and Thank You's are shared.	shares name	reveal Pal	to develop friends in an accepting way.

4. Students may want to keep their Pals for longer periods.

EVALUATION:

Observe the continuation of Secret Pal relationships after the initial time period has ended.

Given the opportunity, the student will be able to develop positive relationships.

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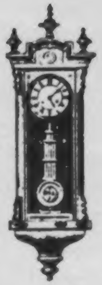
Concept/Competency

MINUTE FRIENDS



SELF CONCEPT

Verbal sharing of self history aids in developing initial stages of trust in group interaction.

Developed by: Klonda Ball

LEVEL K - 4 TIME 45 minutes

SOCIAL EFFECTIVENESS

AFFECTIVE

ENTRY CONCEPTS:

- --Ability to volunteer for participating before a group
- --Ability to verbally share important biographical facts about self

MATERIALS:

Record of the "Minute Waltz" sung by Barbra Streisand;
OR tape of one minute of music

TEACHER TASKS:

INTRODUCTION:

The teacher will explain that this experience is a get-acquainted strategy for a new class.

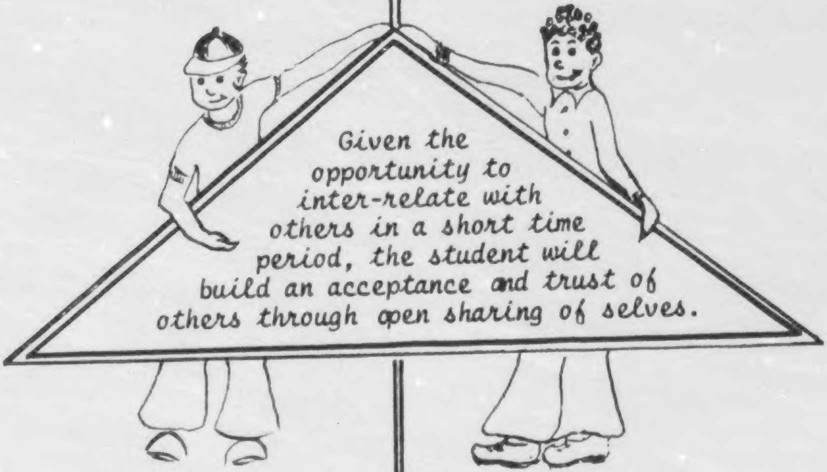
LESSON DEVELOPMENT:

1. Divide the class into groups of three, preferably with students they do not know.
2. Let the participants decide who will go first. That person shares as much as he can about himself in one minute. The others then take their one-minute turn.

STUDENT

ENABLING BEHAVIORS: The student:	In order to:	LEARNINGS:
groups	participate	in small group interaction.
volunteers	share	history of himself/herself in one minute.

3. Next, participants #2 and #3 take one minute to tell participant #1 what they heard him say. Afterwards, #1 and #3 repeat the process for #2 and #1 and #2 for participant #3.	organizes and discusses	present	feedback on shared biographies with others.
4. Resolve the experience by allowing the participants to informally question one another for three additional minutes.	questions	analyze and synthesize	information about new acquaintances in class.
EVALUATION:			
5. The group discusses reactions to the experience of spending one minute becoming acquainted with another person.			



Given the opportunity to inter-relate with others in a short time period, the student will build an acceptance and trust of others through open sharing of selves.

Concept/Competency

Developed by: Klonda Ball

SELF-CONCEPT

Rocks, like humans, have different characteristics of color, shape, texture, size, weight, sharpness, hardness, smoothness.

LEVEL K - 4 TIME 1 + hours

AFFECTIVE: SOCIAL EFFECTIVENESS

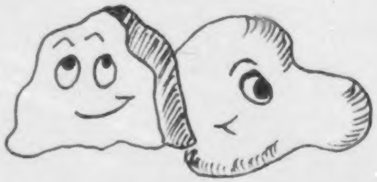
ENTRY CONCEPTS:

--Ability to differentiate between rocks kinesthetically
--Ability to classify inanimate objects
--Awareness of ability to relate to inanimate objects

MATERIALS:

1 medium rock for each child
1 bag of small rocks
paper and pencils
glue, paint, bits of felt, construction paper

TEACHER TASKS:	STUDENT ENABLING BEHAVIORS: The student:	In order to:	LEARNINGS:
INTRODUCTION: Share a pet rock with the children. Explain the rules for caring for the rock and why this particular rock is a favorite. LESSON DEVELOPMENT:			
1. Empty large gunny sack of golf-ball sized rocks on the floor--each child chooses one he is attracted to.	chooses	familiarize self with	identifying interesting characteristics in object.
2. Have child experience the rock; rub and feel, close eyes, rub face with rock--examine each detail. Then everyone put their rock back in the pile, move away, CLOSE THEIR EYES and find their own rock by feeling.	closes eyes	choose	his/her own familiar rock which can be identified by feel only.



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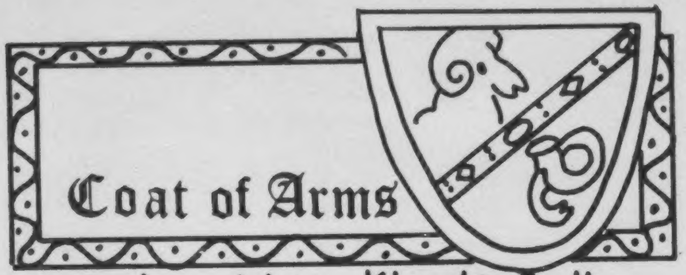
3. Pair students off in two's. Have one lie flat on the floor, eyes closed, the other carefully sets the owner's rock on his forehead. The student lies quietly feeling the rock for one minute. Trade positions.	investigates rock	experience weight	and relate body senses to rock to become AWARE of its characteristics.
Students share experiences.	tells others	analyze	how the rock helped each student respond and to know self better.
4. Let class suggest areas of similarities and differences in rocks. Develop different areas of classification.	lists and classifies rocks	develop	skills in classifying objects.
5. Can people be compared in a similar way?	compares	analyze	similarities and differences.
6. Have each student wish for a magic rock. "Pretend your rock is special! How will it be magic? What can it do?"	creates and writes	gather	assorted imaginative facts into a new whole.
7. Students share: "If you could give a magic rock to the world, what would it be? Why?"	imagines	synthesize	assorted imaginative facts into a new whole.
8. Assign students to each take a rock. "Think of all the different things a rock could be. Choose a rock and turn it into something different."	decorates	create	a new item from a rock.
9. Share "Stone Soup" and the "Myth of Sysyphus".	listens	integrate	creative uses rock can be put to in folk tales and myths.

EVALUATION:

Have students tell which activity they liked best.

As a result of this activity, the student will be better able to relate to his/her own characteristics after having become acquainted with an inanimate object.

Concept/Competency



Coat of Arms

Developed by: Klonda Ball

VALUES

The use of symbols may encourage us to think beyond words.

LEVEL 3 - 6 TIME 1 hour

AFFECTIVE: SOCIAL EFFECTIVENESS

ENTRY CONCEPTS:

--Ability to express desirable qualities about self
--Awareness of differences between what is and what could be in self

MATERIALS:

1 picture of a coat of arms
1 cardboard coat of arms for each child
Crayons

TEACHER TASKS:	STUDENT ENABLING BEHAVIORS: *The student:*	*In order to:*	LEARNINGS:
INTRODUCTION: Show the coat of arms picture. Explain the use of symbolism in commercial logos and coats of arms.			
LESSON DEVELOPMENT: 1. Share coat of arms chart saying, "You are to draw a picture in each square in answer to the question. Draw desirable qualities with which you would like to be associated...NOT in words but in pictures (simplify words for younger children)."	reviews sentences	analyze	choices they have in order to choose what to illustrate.

2. Have the students keep these questions in mind as they complete their shields.

   Discuss:

   --Do I see my life as just a reaction to others, to outside events?
   --Am I doing what I can to control my life?
   --How can I get more out of life?

3. This is a variation:
   1) What is something you are very good at? What is something you are struggling to get better at? Draw two pictures.
   2) What is one value, a deep commitment, from which you would never budge?
   3) What is the material possession most significant to you?
   4) What is your greatest achievement of the past year? What is your biggest setback, failure or defeat of the past year? Draw two pictures.
   5) What would you do with your life if you had it to live over?
   6) What three words (qualities) would you like to have associated with you? These could become your personal mottos to live by.

EVALUATION:

Discuss reactions to the experience of making the shields:

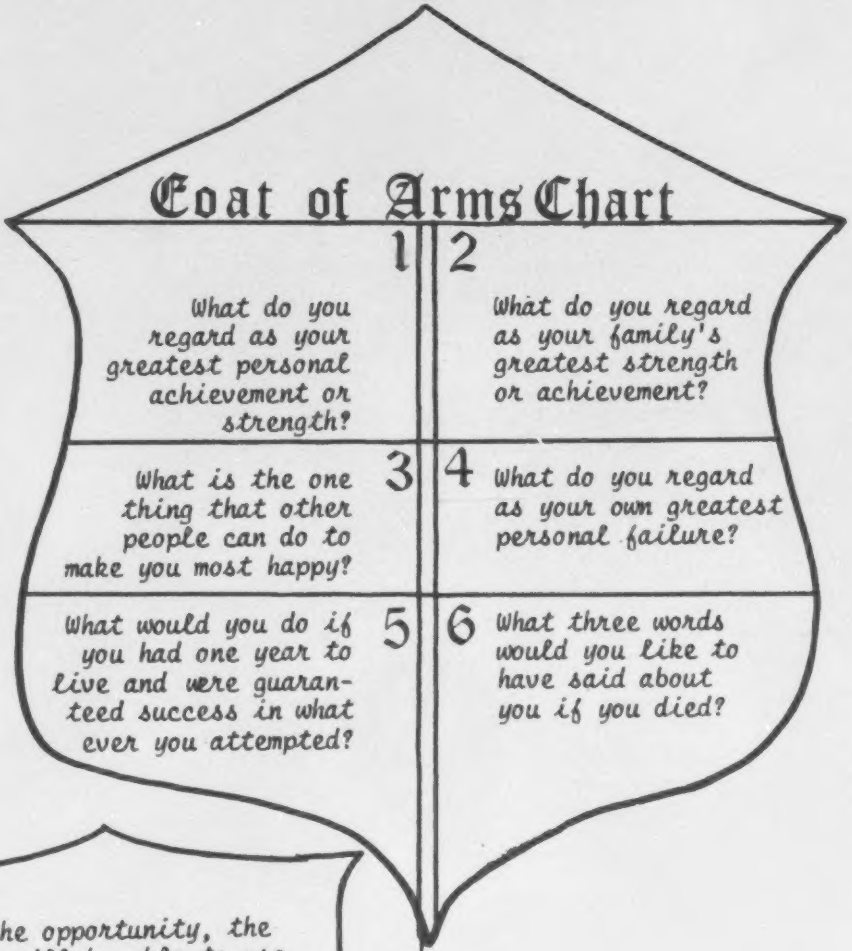
"What did you experience?"

Adapted from Meeting Yourself Halfway or Values Clarification: A Handbook of Practical Strategies for Teachers and Students, by Sidney B. Simon, Argus Comm., 1972. Used with permission from Sidney B. Simon.

considers and questions

synthesize

illustrations on coat of arms with each student's life-style.



Coat of Arms Chart

1 *What do you regard as your greatest personal achievement or strength?*

2 *What do you regard as your family's greatest strength or achievement?*

3 *What is the one thing that other people can do to make you most happy?*

4 *What do you regard as your own greatest personal failure?*

5 *What would you do if you had one year to live and were guaranteed success in what ever you attempted?*

6 *What three words would you like to have said about you if you died?*

Given the opportunity, the student will be able to use abstract symbols to "think" beyond words in designing a statement about his own life choices.

What's in my desk?

Developed by: Klonda Ball

Concept/Competency

VALUES

The desk search helps each student understand his own habits of saving both what he does and does not value.

LEVEL 2 - 6 TIME 30 + minutes

AFFECTIVE: SOCIAL EFFECTIVENESS

ENTRY CONCEPTS:

--Ability to sort items according to use, fondness for and for discarding

MATERIALS:

Paper, pencil, crayons;
Manila folders;
Desks for each child jammed full of assorted belongings

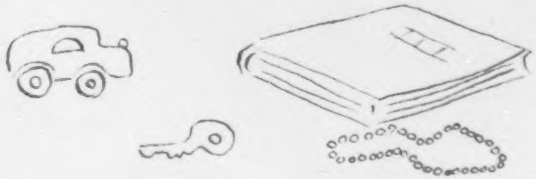
TEACHER TASKS:

INTRODUCTION:

"Quickly, without thinking about why you are doing it, take everything out of your desk and make a list naming each item."

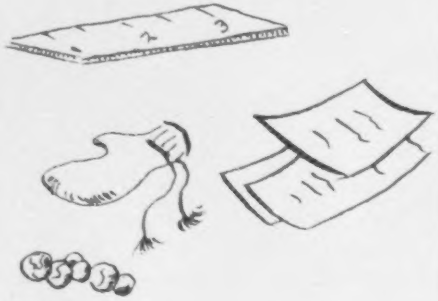
(The teacher does this too!)

(Make a list of common items for young children on the blackboard or have them illustrate the items.)



STUDENT

ENABLING BEHAVIORS:		LEARNINGS:
The student:	*In order to:*	
surveys articles in desk	produce	an illustrated list of the contents.



LESSON DEVELOPMENT:

1. Have children code each item with a P, PR, or F. Anything coded with a P is of no further use, unless they are very special--then they will be saved as a MOMENTO.	codes items CODE P - Past PR- Present F - Future	analyze	usefulness of articles in the past, present or future.
2. Code PR on anything being used right now for school.	codes item	identify	those useful in the present for school.
3. Code F on any items that will be used in the future.	codes items	identify	those useful in the future for school.
4. View the three separate stacks of items. Say: "From the collection of things other than school books, can you say something about who you are? Do you have many personal things? Do you find you think a lot about the future?"	studies items	decide	if child is past, present, or future oriented.
5. Make and decorate folders to store MOMENTO items in.	decorates folders	create	a storage area for saving valuabl momentos in.

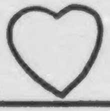
EVALUATION:

Discuss "What's In My Desk" as it relates to the students' lives and says a lot about me and what I value.
Conclude:
"Sometimes what we do says more about what we value than what we say."

"Sometimes we need to do something about what we value."

As a result of sorting desk items in terms of the past, present and future, the student will become aware of his response to life in regards to the passage of time--whether he is past, present, or future-oriented.

Hex Signs



Concept/Competency

VALUES

The choice of symbols for a hex sign will reflect what the student values and hopes to protect.

Developed by: Klonda Ball

LEVEL 3 - 6 TIME 1 + hours

AFFECTIVE: SOCIAL EFFECTIVENESS

ENTRY CONCEPTS:

--Ability to make value choices for symbolizing

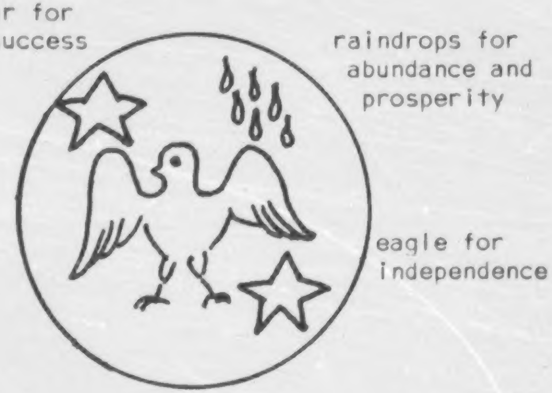
MATERIALS:

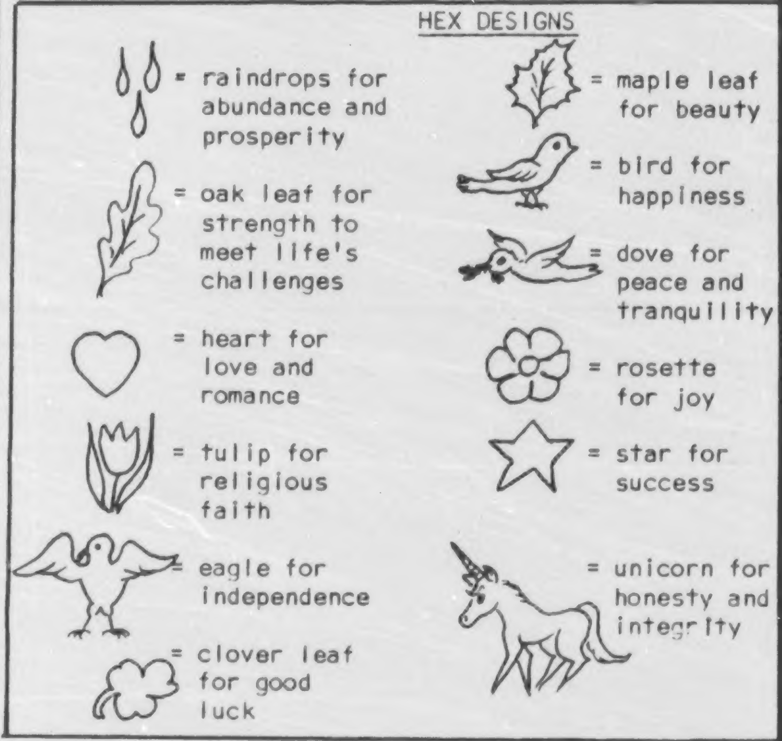
Oaktag for each student
Pencils, crayons
Balsa wood, acrylic paints
Strips of leather

TEACHER TASKS:	STUDENT ENABLING BEHAVIORS: The student:	In order to:	LEARNINGS:
INTRODUCTION: The Pennsylvania Dutch decorate their barns with hex signs to ward off evil spirits. A hex sign with rain drops painted on it is believed to help insure crop abundance; a heart is to bring love and romance. Thus, a hex sign often reflects the values of the person who displays it.	listens	assimilate	background information on hex signs.
LESSON DEVELOPMENT: 1. Discuss hex signs and what purpose they serve.	participates	clarify	purpose for which hex signs are designed.

2. Provide students with sheets of oaktag, pencils and crayons. Allow them to choose three or more hex design symbols from the HEX DESIGNS chart which reflects some of the things they think are important in life. Symbols may be repeated to provide balance.	draws	identify	hex signs which reflect values of importance to him/her.
	designs	organize	picture symbols of values.

For example:





HEX DESIGNS

= raindrops for abundance and prosperity

= oak leaf for strength to meet life's challenges

= heart for love and romance

= tulip for religious faith

= eagle for independence

= clover leaf for good luck

= maple leaf for beauty

= bird for happiness

= dove for peace and tranquility

= rosette for joy

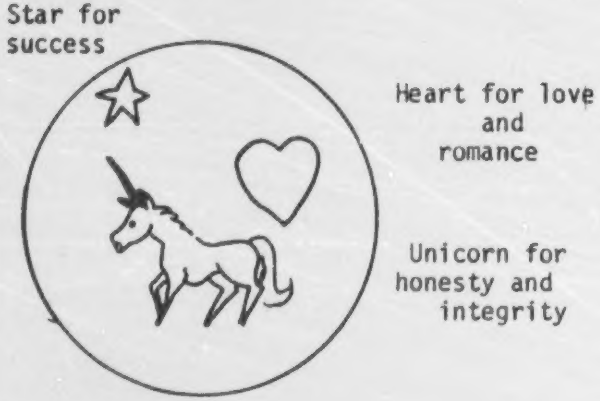
= star for success

= unicorn for honesty and integrity

3. Make hex design necklaces on balsam wood; paint figures with acrylic paints. String on leather strap for wearing around the neck.	designs art objects	formalize	concepts by creating new designs to wear on a necklace.

EVALUATION:

Have students invent their own symbols and designs to represent other things in life that they value.	invents symbols	create	a different set of value symbolism in a hex sign.
Have students examine each others' hex signs and decide which values are most important to the group.	examines	decide	which values are most important.


Star for success
Heart for love and romance
Unicorn for honesty and integrity

Given the opportunity to design their own hex symbols, the students will become more aware of their personal values and represent them in a tangible form.

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Career
Fair

Concept/Competency

CAREER AWARENESS

Numerous and various types of career options are available.

Developed by: Carole Draper

LEVEL K - 6 TIME *Several days*

SOCIAL EFFECTIVENESS

ENTRY CONCEPTS:

--The ability to understand that most people are involved in some type of career

MATERIALS:

Books, magazines, pamphlets, filmstrips, people, etc. that are connected with specific careers.

TEACHER TASKS:

AFFECTIVE:

INTRODUCTION:

The teacher will first begin working with an intermediate group. She may want to introduce the area of careers by asking the students what their families' careers are, or their relatives' and/or friends'. She will list these responses on the board and ask the students if they can think of other choices that are not listed. The teacher will then list these.

STUDENT

ENABLING BEHAVIORS:		LEARNINGS:
The student:	*In order to:*	
names	recall	family career choices.
lists	fill in	other career choices.

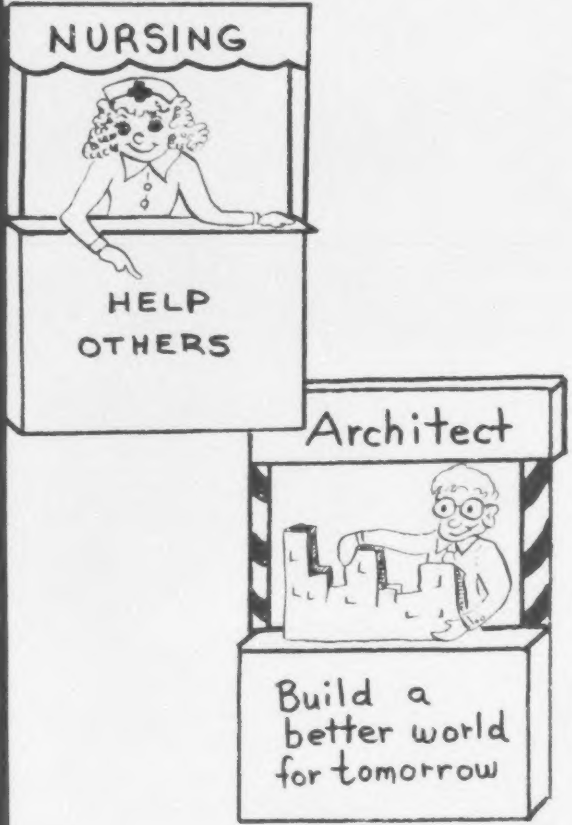
LESSON DEVELOPMENT:

1. From the list that was formed the teacher explains that each child is to select one career that he/she would like to research, or... if there is a career not listed that he/she would rather do, then select that one.	selects	identify	career choices to research.
2. After deciding on a choice, the student begins researching, using basic research skills.	researches	find information	on career choices.
3. After compiling his information on his career choice, the student decides on methods of disseminating the information, such as a report, a mobile, a fact file, a graph, etc.	develops materials	explain	career.
4. The teacher will then explain that all the student's information will be incorporated into a CAREER FAIR for the younger students (primary). Each student is responsible for constructing a booth on his/her career choice.	constructs booth	provide	information of career choice.
5. The student will include all of his/her means of disseminating the information.			
6. After these career booths have been constructed, the teacher will then explain to the younger group that they will be taking a tour of these career booths in order to become aware of or to increase their knowledge of certain careers.	watches listens looks observes notices	be acquainted with, be aware of, become familiar with gain knowledge of	specific careers.
7. The student is encouraged to ask questions about the careers.	asks inquires	gain knowledge of	specific career choices.

EVALUATION:

The teacher and students will discuss the career booths that they saw. The students will decide which career, or careers, they found most interesting and stimulating. The student will write, tape, or draw an important concept of the career they are most interested in.

discusses career booths	decide on	career he/she found most interesting.
writes, tapes or draws	conceptualize	important ideas about careers.


NURSING
HELP OTHERS
Architect
Build a better world for tomorrow

FLORIST
Give flowers

The student will become aware of the different kinds of careers and understand how various careers are related to each other.

Caricature AND Metaphor

Developed by: Susan Sager

Concept/Competency

FIGURATIVE LANGUAGE

Caricature exaggerates the real. Metaphor substitutes a symbol for the real. Both are used to attract our attention and to make complex, abstract ideas more concrete and accessible.

LEVEL 3 - 6 TIME 1 hour

ENTRY CONCEPTS:

A metaphor is one thing standing for another. It is an implied comparison used to produce a vivid mental image. It is related to analogy, fable, and parable.

MATERIALS:

A variety of political cartoons referring to elections and other national and world events, arranged on a bulletin board;
Chalk, chalkboard;
Drawing materials

HUMANITIES

AFFECTIVE:

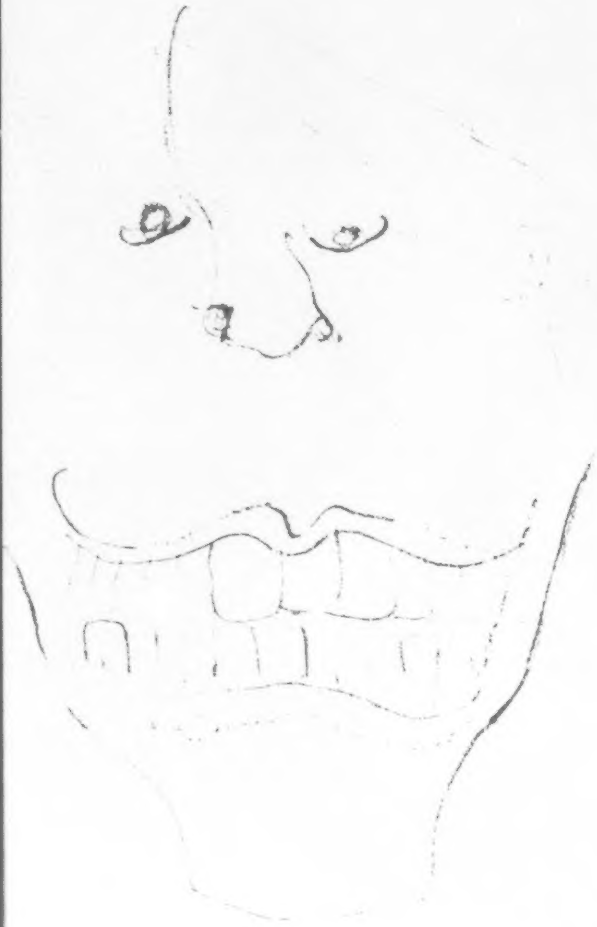
TEACHER TASKS:	STUDENT ENABLING BEHAVIORS: *The student:*	*In order to:*	LEARNINGS:
INTRODUCTION:			
Review the meanings of metaphor and analogy by recalling to the students' minds examples of each that have been studied.	listens	review	examples of metaphor and analogy.
Ask the students to share additional examples from their own experience.	recalls	illustrate	examples of metaphor and analogy, fable and parable, from their own experience.

Caricature and Metaphor

Lead the students to generalize from the examples shared and state in their own words appropriate definitions of each concept. Lead them to see the relationships between the concepts.	generalizes	conceptualize	the meanings of the terms metaphor, analogy, fable, and parable, and the relationships between them.
LESSON DEVELOPMENT:			
1. Pointing out the display of political cartoons and giving the students time to examine them, ask the students to identify examples of metaphor.	examines	identify	examples of metaphor in political cartoons.
Using specific examples, ask the students to identify the reality for which a given metaphor is the symbol.	examines	discover	the realities which given metaphors symbolize.
Ask the students to tell why they think speakers, writers, and artists use metaphor.	imagines	infer	why metaphor is used.
2. Explain that caricature exaggerates a reality rather than substituting a symbol for it.	listens	determine	the meaning of the term caricature.
Ask the children to point out examples of caricature and justify their choices.	selects	illustrate	examples of caricature in political cartoons
3. Ask students to compare and contrast caricature and metaphor and explain the differences.	compares	differentiate	caricature and metaphor.

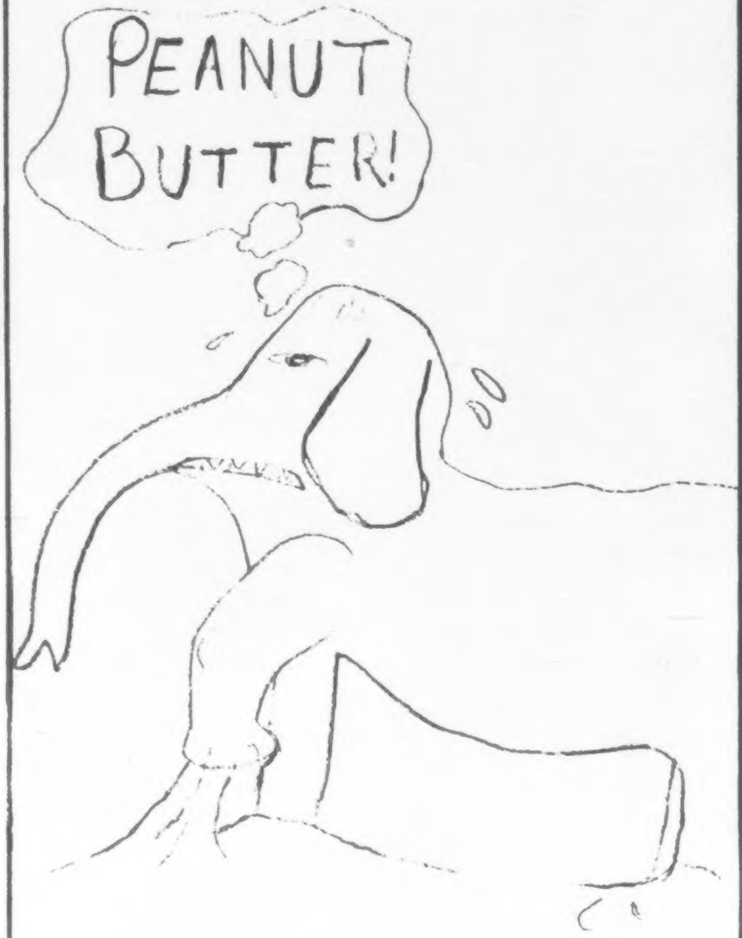
4. Invite the students to pantomime a caricature and a metaphor and see if the others can identify it.	moves	demonstrate	caricature and metaphor through psychomotor activity.
Instruct the students to create their own political cartoons. Discuss possibilities.	draws	create	his/her own ideas of caricature and metaphor.
EVALUATION:			
5. Ask: Why are political cartoons sometimes funny? Why do we laugh at them? What is their purpose? Which newspaper cartoon do you think is the funniest? Why? Which student-drawn cartoon seems the most effective to you? Why?	judges political cartoons	appraise	the nature of humor and its uses.

Given an opportunity to recognize, recall, analyze, create and evaluate many examples of metaphor and caricature, the student will demonstrate an understanding of the basic meaning of metaphor and caricature and the ability to distinguish between them.



CARICATURE

Drawn by George Brennan
5th Grade - Kyrene del Norte School



PEANUT BUTTER!

METAPHOR

Drawn by James Lundquist
5th Grade - Kyrene del Norte School

Concept/Competency

LITERATURE

There is a mutual cause/effect relationship, in fiction, between action taking place in the external settings and activity taking place in the internal settings--the minds of the characters.

Kids and Pirates

Developed by: Susan Sager

LEVEL 5 - 6 + TIME 2 1-hour periods

ENTRY CONCEPTS: --familiarity with the first six chapters of A High Wind in Jamaica --experience in interpreting fiction	MATERIALS: A High Wind in Jamaica by Richard Hughes (Signet Books: New York, 1961); Materials for writing and drawing

HUMANITIES

AFFECTIVE:

TEACHER TASKS:	STUDENT ENABLING BEHAVIORS: *The student:*	 *In order to:*	 LEARNINGS:
INTRODUCTION:			
Say: "In our study of literature, we have used six 'question' words --who, where, when, what, why, and how--to call attention to six elements found in fiction: characters, setting, time, plot, theme, and style.	listens	recall the names of	six basic elements found in fiction: characters setting time plot theme style
Today we will focus on setting, not only in the usual sense of physical and geographical location, but in another, quite different, sense."	listens	determine that	setting is the subject of this lesson--in the conventional sense and in a different sense.

Kids and Pirates

Background for the Teacher:

The novel focuses on children from two families living in post-Emancipation Jamaica: the English Bas-Thorntons and, to a lesser extent, the Creole Fernandezes. Hughes describes the tropical setting and contrasting life styles in a series of vivid scenes.

After a particularly destructive hurricane, Mr. and Mrs. Thornton decide to send John (12), Emily (10), Edward (7), Rachel (5), and Laura (3) to boarding school in England. They are placed aboard the barque *Clorinda* in charge of Captain Marpole, along with two of the Fernandez children, Margaret (13) and Harry (6), who are also going to England to live with an aunt. The children quickly adapt to their new shipboard life.

A few weeks later, the Thornton parents receive a letter from Captain Marpole in Havana reporting that the *Clorinda* was boarded by pirates, who robbed her of her money and cargo, but even worse, took the children onto the pirate schooner, murdered them all, and cast their little bodies into the sea.

The author now returns to the *Clorinda*, and tells a version of the capture considerably more accurate than Captain Marpole's: While the pirates are ransacking the barque and removing the booty to the schooner for sorting, they also take the children aboard the schooner to eat supper. In the gathering darkness, the pirate Captain Jonsen and his mate, Otto, are sorting out anything too easily identifiable and throwing it overboard. At the loud splashes made by a couple of empty trunks, they hear an inexplicable roar of indignation from the neighboring barque.

Once the sorting is over, Jonsen prepares to return the children to the barque and get well clear while the breeze and the darkness last.

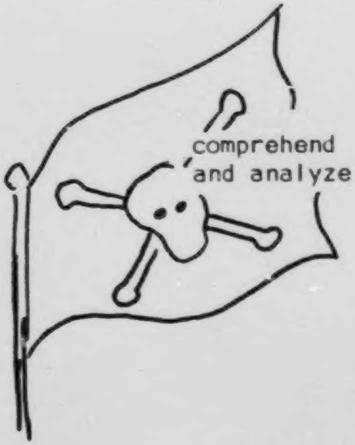
But Marpole's lively imagination had misinterpreted the splashes. Since there was no longer any reason to wait, he ordered his crew to unfurl every sail. And when Jonsen looks that way again, the *Clorinda* is already half a mile to leeward. There is no question of pursuing her. And thus, the pirates find themselves saddled with the unexpected and unwanted burden of seven children.

LESSON DEVELOPMENT:

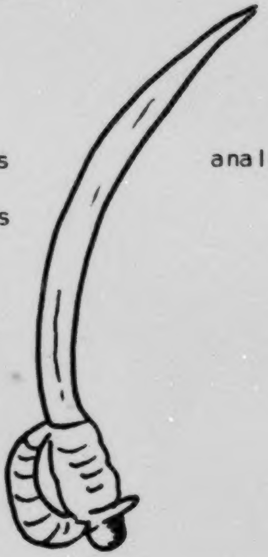
1. Say: "What major settings has Hughes described in this novel? These are the settings in which the action of the story has taken place." (Discuss.)	recalls, responds, discusses	demonstrate knowledge of	the major settings and incidents in Chs. 1-6 of A High Wind in Jamaica.
"What major incidents have taken place in each of these settings? How did the settings help to determine what kinds of incidents might take place?" (Discuss.)	interprets information	determine	a possible relationship between setting and incident.
2. Say: "In addition to the external incidents, there is another and very important kind of activity taking place in this story. In Chapter 6, Hughes described at some length the other kind of setting where this activity takes place. Both kinds of action and both kinds of settings are essential to the plot of the novel.	listens	become aware that	in addition to conventional action in a conventional setting, there is another kind of action in another kind of setting; both kinds of action and both kinds of settings are essential to the plot of the novel.
See if you can apply what you know about conventional action and settings to help you learn about this other kind of action and setting.	listens	determine that	what is known about conventional action and settings can be applied to this kind of action and setting.
Here's a clue: Something very important happened to Emily at the beginning of Chapter 6. What was it?	recalls	remember	something important that happened to Emily at the beginning of Ch. 6.

To rephrase it: For the first time, Emily became consciously aware of her own personal identity. With this new consciousness came sharp new perceptions and new anxieties. What incidents might have triggered this sudden new awareness?" (Discuss.)	listens, responds, discusses	relate	Emily's new consciousness to the incidents which might have triggere it.
"Now let's back track. What's my analogy? In the passage just discussed, what was the 'setting' and what was the 'action'?" (Discuss.)	considers further	grasp	the analogous relationships: mind/mental activity setting/action.
"To sum up, we might say that Jamaica, the Clorinda, the pirate schooner, and Santa Lucia are the external settings where earthquake and hurricane, sea voyage, imprisonment, and accidental death take place; while the minds of Emily and the other characters are the internal settings where mental activity takes place.	sums up	assimilate	the analogous relationships: external settings and action/ internal settings and mental activity.
What are the implications of this event--Emily's personal 'awakening'? How do you think her new-found awareness will affect how Emily sees the world and what Emily does?" (Discuss.)	speculates	predict	the possible implications of Emily's new consciousness.
"As I read Chapter 7, notice whether Hughes expands and develops this idea of the internal setting--the human mind."	prepares to listen	notice	whether Hughes expands and develops the idea of the internal setting -the human mind.

3. (Part I):



Say: "Hughes begins with a descriptive passage about shipboard life and the different ways in which the children have adapted to it. You may draw portrait sketches of Edward and Harry or of Rachel and Laura while I read."	listens	comprehend and analyze	the continuing story.
(Read the first five paragraphs on p. 107.)			
Ask: "How do Edward and Harry differ from each other?"	compares and contrasts	examine	the ways in which Edward and Harry differ from each other.
(Read the long paragraph beginning at the bottom of p. 107.)			
Ask: "How does Emily differ from both Edward and Harry?	compares and contrasts	examine	the ways in which Emily differs from both Edward and Harry.
What elements from Emily's experiences and emotional responses are combined in her dreams? How is reality transformed into nightmare fantasy? Is Hughes saying something here about the effect incidents in the external setting have on activity in the internal setting?"	recalls and relates	analyze	how Emily's experiences and emotional responses are combined and transformed in her dreams.



(Read the 'bridging' passage beginning at the bottom of p. 108 and continuing to the middle of p. 111. No special interpretation is required.)	listens	comprehend and analyze	the continuing story.
Say: "Hughes goes on to compare Rachel and Laura. He describes them from the outside, telling of their characteristic activities. Then he goes inside and attempts to describe their minds.	listens	become aware that	Hughes describes Rachel and Laura externally through their activities and and internally through their mental processes.
One of Hughes' major tenets is that adults and children think in quite different terms from one another, while babies think quite differently from either. This leads to problems in understanding and communication.	listens	determine that	Hughes believes that adults, children, and babies think in entirely different terms and categories from one another.
Do you agree with this in principle? See if you are able to agree with Hughes' elaboration of this idea!"	considers	determine whether he/she believes that	the radically different kinds of thinking of the three groups lead to problems in understanding and communication.
(Read from the middle of p. 111 to the end of section i on p. 115.)	listens	comprehend	the continuing story.

Ask: "How do Rachel and Laura differ from each other? How does Emily differ from both?	compares and contrasts	examine	the ways in which Rachel and Laura differ from each other; the ways in which Emily differs from both.
Hughes uses many analogies which contain references to history, mythology, and other literature. A well-educated adult will pick these up immediately. A less experienced young person sometimes has to dig a little harder!	listens and assimilates	become aware of	the author's use of analogies containing references to history, mythology, and other literature.
Here's an example: Hughes says of Laura that 'the child mind lived in the midst of the familiar relics of the baby mind, like a Fascist in Rome. What does he mean? What was going on in Italy in 1928 at the time that this novel was first published? What had gone on there many centuries earlier?" (Discuss.) (Some research may be needed.) "Is the comparison an apt one?"	listens, responds, discusses (Laura's child mind existed among many traces of her baby mind just as a Fascist in the Rome of 1928 lived among the ruins of Ancient Rome.)	comprehend and judge	a complex historical analogy.
. (Part I): (This follow-up can be done as homework or during a work period.)			

Kids and Pirates

Instructions: Compose a story in three paragraphs. In the first paragraph, make up and narrate objectively an incident in the external setting of the pirate schooner. In the second paragraph, tell how Rachel responds to the incident internally. In the third paragraph, tell how Laura responds to the incident internally.	composes a story	demonstrate an understanding that	the subjective interpretations of reality by different minds can differ vastly from each other as well as differing radically from the objective reality itself.
5. (Part i): Ask: "What do you think of Hughes' assertion that babies are not human and children are not sane? Do you think he is really serious? If you don't like it...then can you refute it? (Discuss.)	considers and discusses	accept or reject	Hughes' assertion that babies are not human and children are not sane.
3. (Part ii): Say: "Today I will read Part ii of Chapter 7. Listen analytically. Notice whether anything Hughes has said previously helps to explain what now happens. You may draw a portrait sketch of Emily while I read."	listens	determine	the important things to notice as the story proceeds.

(Read Part ii, pp. 115-125, straight through with very little interpretation so that the students will feel the swiftness of the action and the emotional impact of the shattering climax.)	listens	find out	how the forces that Hughes has been describing come together to produce a catastrophe.
Ask: "Why did Emily act as she did? Step by step, what incidents in the external setting and responses in Emily's internal setting led to the catastrophe?" (Discuss.)	conducts a post mortem	explain	how and why the catastrophe occurred.
4. (Part ii): (Allow the students to respond to the story in any way they deem appropriate to help them assimilate the experience and "put it all together.")	responds and interacts	synthesize	the elements of the experience.
5. (Part ii): Say: "This grotesque mischance might have been prevented if Emily had been able to make adequate use of an essential thinking process. Which process? Why was Emily unable to use this process adequately? Might a more experienced or wiser person have evaluated the situation differently and thus acted differently?" (Discuss.)	listens, responds, discusses (evaluation)	conclude that	the process of evaluation, adequately used, is essential for determining a rational and appropriate course of action.
EVALUATION: (See Activity #5 for Part i and Activity #5 for Part ii.)	*Given a guided listening experience with Ch. 7 of A High Wind in Jamaica, the student will demonstrate the ability to identify both external and internal settings and actions, and to explain the mutual cause/effect relationship between them.*		

For additional lessons in teaching the Humanities, see "LORD & LADY", p.p. 244 - 255 and "LIFE", p.p. 256 - 263.

MONSTER MANIA

Concept/Competency

BACKGROUND IN MUSIC,
ART AND DRAMA

Monsters of every variety--real and make believe--have an important place in human history, knowledge, and belief.

Developed by: Susan Sager

LEVEL 1 - 6 TIME *Flexible*

ENTRY CONCEPTS:

--ability to distinguish fantasy from reality
--interest in monsters, make believe and real

MATERIALS:
Monsters Who's Who by Dulan Barber (Crescent Books: New York, 1974) and other books about monsters; Selected classical music; selected art books; selected filmstrip-record dramatizations; materials for art and writing; equipment for making slides and tapes

HUMANITIES

TEACHER TASKS:

(Note: This model demonstrates a general procedure that may be adapted for teaching any theme-centered unit.)

AFFECTIVE:

INTRODUCTION:

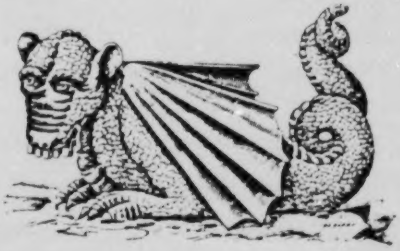
This unit of study may be initiated in a number of ways. The teacher might read aloud one of the excellent books on monsters currently available. Or a television show or current movie might spark the students' already existing interest in monsters. The teacher's task is simply to cultivate and guide this interest so that it will yield the greatest possible richness of cognitive and affective experience.

STUDENT

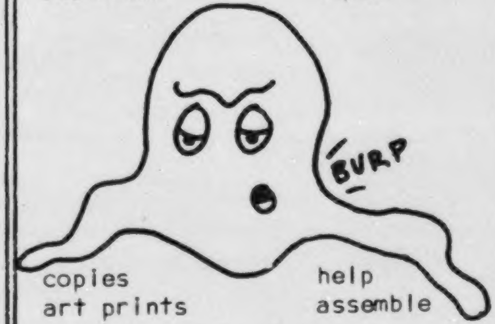
ENABLING BEHAVIORS: The student:	In order to:	LEARNINGS:
participates in a unit about monsters	gain	a theme-centered total experience integrating the arts and humanities.

LESSON DEVELOPMENT:

1. Encourage the students to find out as much as they can about monsters. Sources of information can be folklore and mythology, factual and fiction books, reference works, television, and movies. A 3" x 5" reference card may be kept on every different kind of monster, and filed alphabetically.	gathers information	acquire	a rich background of knowledge about monsters.
Have the students listen to music such as Moussorgsky's "Nigh on Bald Mountain" and Stravinsky's "Rite of Spring" and let their imaginations visualize the monsters suggested by the music.	visualizes monsters while listening to music	acquire	familiarity with selected classical music.
Allow the students to examine pictures of monsters in the fine arts in books about Ancient Egyptian and Mesopotamian cultures, Classical civilizations, Medieval bestiaries, and individual artists such as Hieronymus Bosch and Francisco de Goya.	examines pictures of monsters	acquire	familiarity with selected examples of work from the fine arts.
Have the students view and listen to filmstrip-record dramatizations of well-known stories dealing with monsters from folklore and mythology.	views and listens to filmstrip-record stories	acquire	familiarity with dramatized versions of well-known folktales and myths.



2. Have the students make a Monster Alphabet. Individuals can select and draw portraits of one monster for every letter of the alphabet. The portraits can be displayed, with sentence-strip labels, across one wall of the classroom. A brief descriptive article about each monster may be included. When the display is taken down, it may be made into a permanent scrapbook for the class.	selects, draws, and writes about a monster	help assemble	a Monster Alphabet.
Allow selected students to tape an auditory Monster Alphabet. Each monster name, preceded by an alliterative descriptive word (for example, Abominable Anthropophagi...Bilious Blob... Circumnavigating Cyclops, etc.)may be expressively spoken, followed by an appropriate brief musical selection. The tape may be used by older students to teach younger children a lesson in creative movement.	matches monsters and music	assemble and tape	an auditory Monster Alphabet with appropriate musical selections suggesting monsters.
Have some students copy art prints previously studied, using a 35-millimeter camera and a copying stand.	copies art prints	help assemble	a slide collection of monsters in the fine arts.
Encourage interested students to dramatize "Beauty and the Beast," "Perseus and the Gorgon," or some other well-known story	dramatizes a story	translate	narrative form into dramatic form.



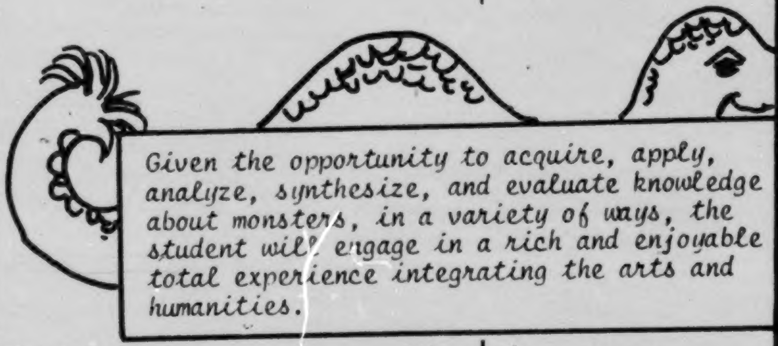
3. At this level, lead the students to develop--analytically--a comprehensive definition of monsters. The dictionary recognizes the following characteristics as possible indicators of monsters: 1) abnormal form or structure, 2) enormous size, and/or 3) excessively wicked or cruel behavior	defines, compares, classifies, and categorizes monsters	isciate	the specific characteristics which identify monsters; the innumerable ways in which monsters can be categorized.
Have the students classify the full spectrum of monsters they have studied according to the standard system above. In addition, have them categorize monsters in as many ways as they can think of.	(Responses will vary.) factual/fantasy living/extinct traditional/modern folk/literary organic/mechanical humanoid/non-humanoid monomorphic/polymorphic etc.		
Have the students analyze--for logical soundness and adequacy of evidence--arguments for or against the existence of Bigfoot (Yeti, Abominable Snowman), the Loch Ness Monster, and other disputed cases.	dissects and examines arguments 	demonstrate	the ability to analyze--for logical soundness and adequacy of evidence--arguments for or against disputed cases.

Monster Mania

4. Provide students the opportunity to:			
1) compose and perform songs about monsters;	composes and performs	synthesize	music and monsters.
2) create a fantasy world mural populated with student-invented monsters; these could be polymorphic creatures, composed of parts of natural animals--but in unnatural combinations;	creates a mural	synthesize	art and monsters.
3) write original fantasy fiction or write and dramatize an original play with monsters as characters;	writes a play	synthesize	drama and monsters.
Or...put it all together and create and produce a multimedia presentation for other classrooms.	produces a multimedia presentation	synthesize	the humanities and monsters.

EVALUATION:

5. Lead a class meeting or round table discussion on one of the following:	discusses and interacts	clarify and evaluate	ideas and beliefs about monsters.
1) How can we tell whether a monster is real or make believe? What are the tests for reality?			
2) How important have monsters been in human affairs throughout history? Why?			



Given the opportunity to acquire, apply, analyze, synthesize, and evaluate knowledge about monsters, in a variety of ways, the student will engage in a rich and enjoyable total experience integrating the arts and humanities.

Concept/Competency

HISTORICAL PERSPECTIVE

Each new generation has to face new problems as the result of constant change. The rate of change is accelerating rapidly. This necessitates new problem-solving skills--as well as a firm sense of values about where we want to go.

ROOTS AND BRANCHES

Developed by Susan Sager

LEVEL 3 - 6 **TIME** 4 30-min. periods

ENTRY CONCEPTS:

--ability to deal with concepts involving generations, ancestry, and descent

--ability to draw reasonable conclusions when analyzing data

MATERIALS:

Charts illustrating family trees that
(1) "grow" down
(2) "grow" sideways
Duplicated branching diagrams for students;
History resource materials;
Writing paper and pencils

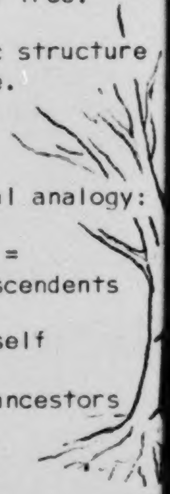
HUMANITIES

AFFECTIVE:

TEACHER TASKS:	STUDENT ENABLING BEHAVIORS: The student:	 In order to:	 LEARNINGS:
INTRODUCTION: (Ask the students whether they know what a "family tree" is. Discuss the ideas that are contributed. Ask whether the students know the purpose or possible benefits of tracing one's ancestors. During the course of the lesson, clarify any unfamiliar terms.) 	listens, responds, discusses 	gain awareness that	a "family tree" is a diagram of an individual's ancestry, relatives in the same generation and/or descendents.

LESSON DEVELOPMENT:

1. If you feel as the author of this lesson does, say: "Something has always bothered me a little bit about calling a diagram of ancestry a tree.	listens	become aware of	certain incongruities involved in calling a diagram of ancestry a "family tree."
Trees grow up out of the soil, with their branches reaching skyward. Their roots reach down into the soil, seeking water and nutrients.	listens and visualizes	review	the basic structure of a tree.
If we see our self as the trunk of the tree...then the roots represent our ancestors and the branches represent our descendents." (Discuss.)	listens and discusses	identify with	a personal analogy: branches = descendents trunk = self roots = ancestors
"But a 'family tree' isn't shown like this. It seems to grow in the opposite direction--'down' instead of 'up.'" (Show illustrative chart.)	observes a chart	notice that	some family "trees" grow down instead of up.
"And often it even grows sideways!" (Show illustrative chart.)	observes a chart	notice that	some family "trees" grow sideways.



"Be that as it may, let's talk about our ancestors.	listens, responds discusses	determine that	we are going to talk about our own ancestors; and how many we have in each generation.
How many parents does every human being have? I mean biological parents, whether present or distant, living or dead.	(2)		
How many grandparents?	(4)		
Great-grandparents?	(8)		
Great-great-grandparents?	(16)		
What happens to these numbers as we go back each generation?"	(They double.)		
(Discuss.)			
2. (Distribute duplicated branching diagrams with a single line on the right for the student's name and birthdate, and two, four, and eight lines fanning out to the left for the names and birthdates of parents, grandparents and great grandparents.	accepts and studies a branching diagram	become familiar with	one kind of "family tree" branching diagram.
Have the students fill in as much of their diagrams as they can. Diagrams may be completed at home, using family members as sources of information.	fills in the lines of the diagram	gain information about	the names and birthdates of his/her own ancestors.
As an alternative, a student may make a family tree diagram for a famous person such as Queen Elizabeth II of England.)	completes another family tree	gather information about	the ancestry of a famous person.

3. (Have students analyze and compare what was going on--during the time segments delineated by the births of the four generations--in technological development, historical events, popular culture, etc.).	investigates and researches generational time spans	develop	the ability to analyze and compare historical conditions during different generations.
The general form of the questions: "In the year you (your parent, etc.) were (was) born, what important technological advance (historical event, etc.) had just taken place? What was the population of the United States that year?" etc.	answers questions	demonstrate that he/she has acquired	a sufficient body of data from which to draw valid conclusions.
(Through research and further comparison and analysis, lead the students to develop a sense of historical sequence and continuity.	probes further	develop	a sense of historical sequence and continuity.
They should also be led to discover such significant trends as accelerating technological development and geometrically increasing population.)	analyzes data	discover	significant trends such as accelerating technological development and geometrically increasing population.

4. (As students become familiar with the history of their own and their immediate ancestors' generations, have each student write a story about a hypothetical typical day in the life of a parent, grandparent, or great grandparent when he/she was the same age as the student is now.	synthesizes historical information and imagination	compose	a story about a hypothetical typical day in the life of an ancestor at the students' same age.
Using resource materials as well as personal interviews, students should include as much historical information as can be integrated into their stories. But there should be small, personal details of the kind that seldom get into history books.	uses resource materials and personal interviews	integrate	historical information and small personal details.
The stories may be displayed on the classroom wall in different rows for each generation.)	reads stories written by class	appreciate that	the way of life of each generation differs from that of preceding and following generations.

EVALUATION:

5. (During a class meeting, discuss the developments that have taken place in transportation just during the lifetime of one student's grandmother or great grandmother.)	listens, discusses, interacts	conceptualize	the rapid developments that have taken place in transportation during the lifetime of a still-living relative.

Questions to consider:

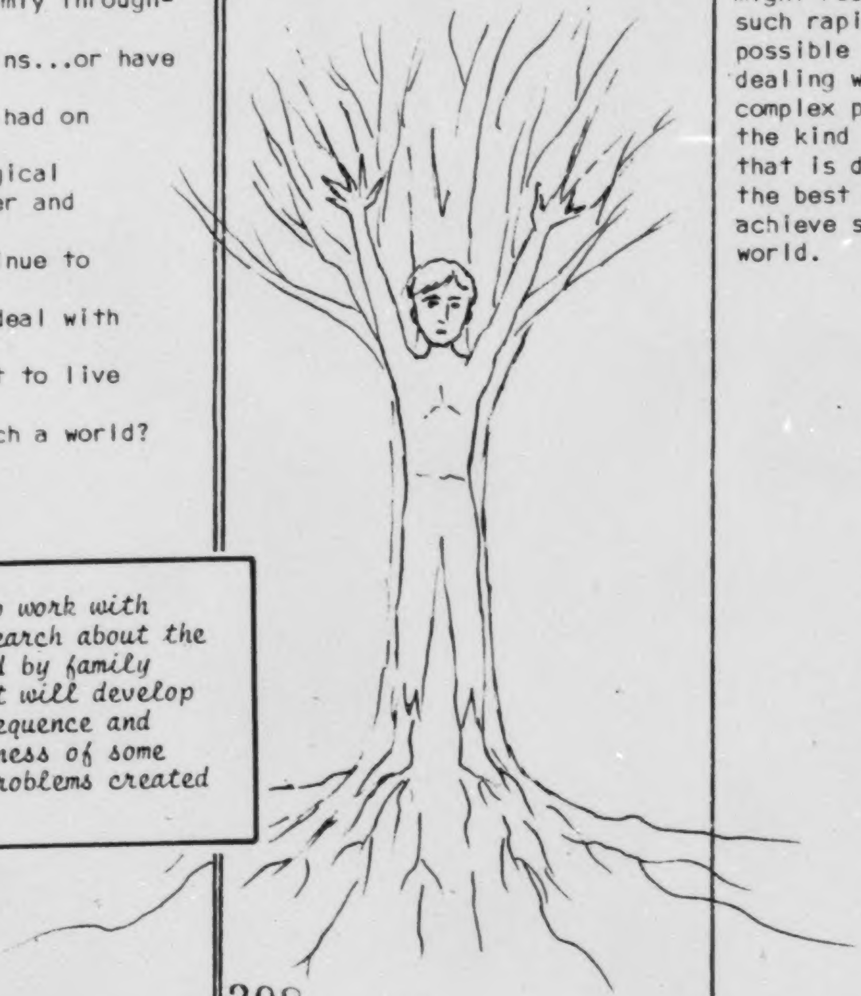
What are the implications of such rapid change?
What effect has it had on our life style?
Has it had this effect uniformly throughout the world?
Have all the changes been gains...or have there been losses as well?
What effect has rapid change had on our values and beliefs?
Why has the rate of technological development accelerated faster and faster in recent years?
Why does the population continue to increase?
What are the "best" ways to deal with such conditions?
What kind of world do we want to live in? Why?
How might we best achieve such a world?

Given the opportunity to work with family trees and do research about the time segments delineated by family generations, the student will develop a sense of historical sequence and continuity and an awareness of some of the conditions and problems created by accelerating change.

listens,
discusses,
interacts

consider

implications of such rapid change; problems that might result from such rapid change; possible ways of dealing with these complex problems; the kind of world that is desirable; the best ways to achieve such a world.



Cognitive

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Concept/Competency

PATTERN PENDING

DIDACTIC EQUIPMENT: FIGURAL

A block pattern figure on a square ground can be duplicated (translated), or it can be transformed (1) by conserving its area but changing its shape, or (2) by conserving its shape but changing its area through dilation or its orientation through rotation or reflection.

Developed by: Susan Sager

LEVEL K - 4 TIME 3 30-min. periods

INTELLECTUAL EFFECTIVENESS

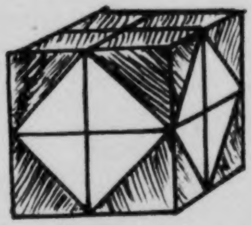
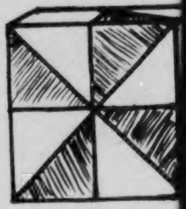
ENTRY CONCEPTS:

Geometric designs can be constructed from a variety of different materials. Modular materials make it possible to construct a single figure in several different ways.

MATERIALS:

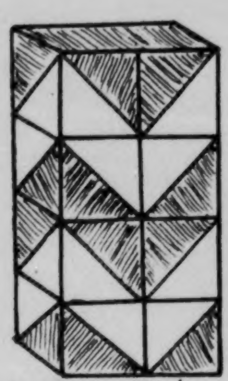
Several dozen Parker Brothers Pattern Pending design blocks;
Pencils, scratch paper;
Graph paper or dittoed grids;
Book - Seeing Shapes;
Duplicated exercises for evaluation

COGNITIVE:

TEACHER TASKS:	STUDENT		
	ENABLING BEHAVIORS:		LEARNINGS
	The student:	*In order to:*	
INTRODUCTION: Just prior to an activity period, introduce the students to the pattern blocks. Point out that they are very good for creating all kinds of attractive designs. Students may wish to produce some of the patterns suggested in the leaflets accompanying the blocks. LESSON DEVELOPMENT: (at another session) 1. Have students seat themselves in a circle on the floor. Distribute a generous quantity of blocks for them to examine.	manipulates 	become familiar with	Pattern Pendin design blocks. 

Ask: "How many faces does any cube have? How many edges? How many corners? How many faces meet at each corner? How many edges?	observes	identify	basic properties of cubes.
How many black faces does each of these cubes have? How many white faces? How many black and white faces? How are these cubes constructed?"	observes	identify	specific characteristics of Pattern Pending design blocks.
2. Say: "The square ground for a figure you wish to construct may be made up of different numbers of smaller squares, called cells. See if you can figure this out: How many rows of how many blocks would be needed for a four-cell design? A nine-cell design? A 16-cell design? (etc.) How is the computation on these problems different from that on related problems you may have solved in the past?	applies math concepts (2 rows of 2) (3 rows of 3) (4 rows of 4) (Usually we multiply the factors and generate the product. In this problem, we began with the product and worked backward to the factors.)	solve	a problem on area.
3. Shortly before an activity period, say: "I am going to ask one of you to construct a design on a nine-cell square ground."	listens	determine	the task to be performed.
(Allow time for a student to do this while the rest of the group observes. As soon as the design is complete, have another student record it on graph paper or a grid.)	constructs a design	translate	verbal instructions into figural form.
	records the design	translate	a tangible construc into a pictorial "M

"Now, I would like a second student to construct a nine-cell design. The figure on your ground will be equal in area to the first figure...but different in shape." (Allow construction time and have the design recorded as above.)	constructs a design	transform	the original figure into an equal-area figure of a different shape.
"Take a good look at the two designs and analyze them. Can you calculate the least number of moves it would take to change the first design to the second? Record your solution." (Allow a small, interested group to pursue this investigation during the activity period.)	analyzes the designs	calculate	the least number of moves needed to transform the first design into the second.
At another session, say: "In our previous exercises, we have conserved the area of the figures but changed their shape. It is also possible to conserve the shape of a figure...but change its area--size--or its orientation--direction in which it is pointing.	considers and designs	appraise and synthesize	the kind of shift in viewpoint needed to look at geometric figures in new ways
Thousands of years ago, a Greek mathemetician named Euclid stated that geometric shapes have four invariant properties." (Write on the board, read aloud, and explain: 1. Translation - Duplicating exactly 2. Dilation - Expanding or contracting 3. Rotation - Turning around 4. Reflection - Mirroring an image.)	listens and observes	learn	the mathematical vocabulary: translation, dilation, rotation, reflection.



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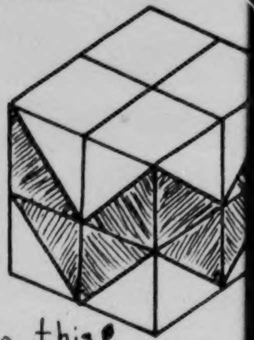


to this!

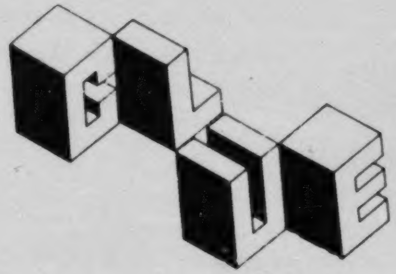
Have students demonstrate understanding of these terms by producing block patterns.	manipulates blocks	demonstrate	understanding of terms: translation, dilation, rotation, reflection.
4. (Invite the students to create original block patterns and record their designs on graph paper or dittoed grids.)	arranges blocks	create	a variety of original patterns.
EVALUATION:			
5. "I have here an exercise with pairs of figures for you to evaluate.	listens	determine	the instructions to be followed in doing the evaluation exercise.
If you think a pair of figures illustrates translation, write 1. If you think it illustrates dilation, write 2. If you think it illustrates rotation, write 3. If you think it illustrates reflection, write 4. Be prepared to defend your answers."			

Given the opportunity to take part in a variety of activities with Pattern Pending design blocks, the student will demonstrate understanding of concepts involving

(1) conservation of area and transformation of shape

(2) conservation of shape and transformation of area or orientation.

Concept/Competency



Developed by: Susan Sager

DIDACTIC EQUIPMENT: SYMBOLIC

To solve a mystery, it is first necessary to identify the elements of the mystery (such as the crime, circumstances, suspects, motive, and opportunity), and then to select the most productive strategies for converging on the solution.

LEVEL 3 - 6 TIME 3 45-min. periods

EFFECTIVENESS

ENTRY CONCEPTS:

Detectives seem to use a systematic step-by-step process to solve mysteries.

MATERIALS:

One or more Clue Games (Parker Brothers)
Chalkboard, chalk, pencils,
Writing Paper
Legal-size envelopes
Book of short mystery stories

COGNITIVE: INTELLECTUAL

TEACHER TASKS:

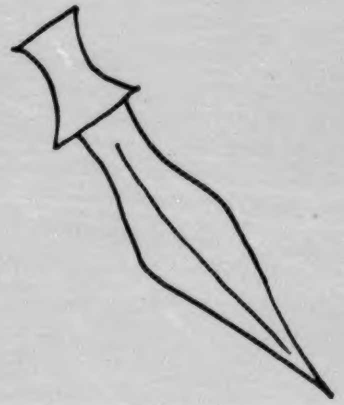
INTRODUCTION:

During a class meeting, ask: "How many of you have read mystery stories or watched them on television or in the movies?"
(Mention can be made of Ellery Queen, Columbo, Cannon, old Perry Mason reruns, or other current television shows, and such recent films as Murder on the Orient Express and Murder by Death.)

Say: "Let's not get involved in rehashing the plots of half a dozen TV shows. What I would like to have you focus on are the general strategy and processes used by the investigator to solve a crime, rather than the details of any individual story plot.

STUDENT

ENABLING BEHAVIORS: The student:	In order to:	LEARNINGS:
remembers	recognize	general processes of investigation and detection used by solvers of mysteries



(As the discussion progresses, help the students keep to the purpose of extracting and generalizing about the deductive processes used by solvers of mysteries.)	discusses	clarify	understanding of deductive processes
LESSON DEVELOPMENT:			
1. (Have the students seat themselves in a semicircle at a table facing the board.) Holding up a Clue game box, ask: "How many of you are familiar with the game of Clue?" (Note show of hands.) "Good. These people will be able to help the rest of you learn this game during our activity periods. Meanwhile, to refresh the memories of those who have played Clue and introduce it to the rest of you, Clue is like a 'whodunit' mystery story. The 'drama' takes place in Mr. Boddy's magnificent mansion. Mr. Boddy himself is apparently the victim of foul play. Fortunately, discovering the solution to this crime is much less complex than solving a mystery in a story or solving a crime in real life.	listens observes	become familiar with	the game of Clue
The object of the game is to answer these three questions: 1. Where was the crime committed? 2. By whom? 3. With what weapon?	listens observes	determine	the elements and processes used in playing Clue.

The solution lies concealed in the case file, which contains three cards answering these three questions. The solution is to be deduced logically through the process of elimination."

PROF. PLUM

Indicating the equipment, say: "Here is the game board with the floor plan of Mr. Boddy's mansion. The crime was committed in one of these nine rooms... (indicate each in turn.)

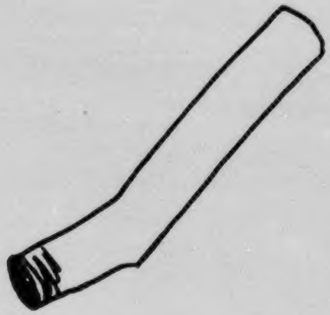
The crime was committed by one of these six suspects...(Name each while holding up the card.) Here are colored tokens to represent each one.

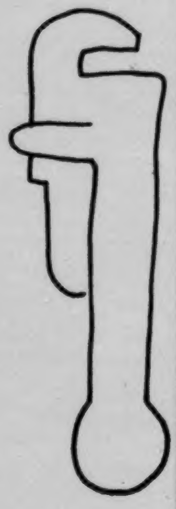
The crime was committed with one of these six weapons...(Name each while holding up the implement.)

At this point, have the students play the game.	plays Clue	acquire	experience in using deduction in a game situation
"Now, I'm going to ask a question to see how well you can apply your knowledge of mathematical operations.	transfers learning	solve	an unfamiliar problem related to the Clue game.

If we are limited to nine possible locations, six possible suspects, and six possible weapons...then how many possible solutions are there to the crime?"

(Notice how students attempt to solve this problem. Do they use blind rules of thumb? trial and error? logical reasoning? Help them to "map" suggested solutions on the board. For example,



list the nine locations, six suspects and six weapons in three columns and have the students speculate about how to determine the number of possible combinations.)		
If students are perplexed, say: "Okay. Maybe we need to simplify this a little in order to discover the principle we're looking for. What if we only had two locations, two suspects, and two weapons? How many possible solutions would there be then?"	simplifies extract	a general principle for solving pre-probability problem
After students have worked this out by trial and error, ask: "Can you state your method of solution in the form of a specific equation?	($2 \times 2 \times 2 = 8$)	
Now...Can you state your method in an equation that will give us the solution to our larger problem with the Clue game?"	($9 \times 6 \times 6 = 324$)	
(As this may be beyond the computational ability of some of the students, help them to work it out in steps.)		
"Now...Can you state this equation as a formula--a kind of universal equation that would give us the number of possible solutions for any number of locations, suspects, and weapons? How will you go about this? Will you need special symbols and a key?	($L \times S \times W = N$)	

Now let's try some probability. If you just guessed wildly at a solution to a Clue game mystery, before you started to play, what would be the chances--the probability--of your being right?.... Those aren't very good odds, are they? How could you improve your odds as the game progressed?	reasons	solve	a probability problem
3. During our activity period, six of you may play Clue. You will use deductive reasoning and elimination logic to solve the crime. Each activity period, another group of six may play Clue until everyone can use efficiently the processes necessary to reach a solution.	plays Clue	practice	basic elimination logic deductive reasoning
4. "See if you can write a good mystery story that a clever reader could solve logically by using the clues that you provided. Write the solution to your crime, with supporting evidence, on a separate sheet of paper which you fold and place in an envelope.	composes	extend comprehension	an original mystery story
Have a friend critique and proofread your mystery. Then make a fair copy, writing on only one side of the paper, to post in our Mystery Corner where everyone will have a chance to solve it.	critiques	extend	skills in proofreading, editing, and evaluation

EVALUATION:

5. What is the best way to solve a logic elimination problem? the worst way? Why?

I am going to read you a short mystery story but leave off the ending. See if you can guess the correct solution to the mystery. Be prepared to defend your answer.

MRS. PEACOCK

Lettering from Fantastic Alphabets, Jean Larcher, Dover Pub., Inc., 1976.

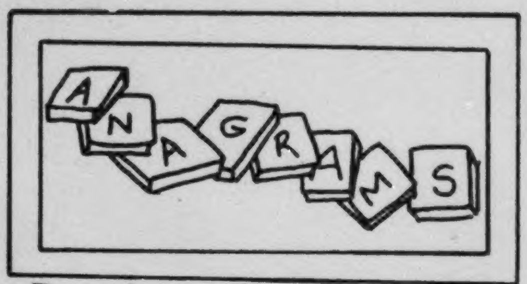
considers

judge

the best way to solve logic elimination prob problems.

COL. MUSTARD

Given the opportunity to become familiar with the game of Clue, play it, and participate in a variety of related activities, the student will become proficient in identifying the elements in any kind of perplexing problem or mystery and in selecting the most productive strategies for solving it.



Developed by: Carole Draper

Concept/Competency

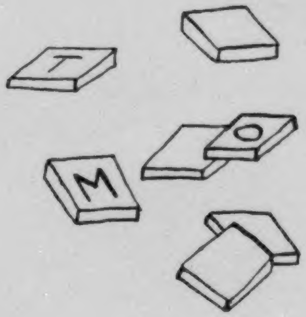
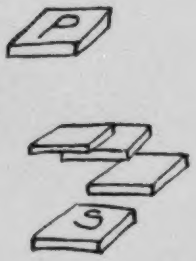
DIDACTIC EQUIPMENT: SYMBOLIC

Words are formed through the use of individual letters.

LEVEL K - 6 TIME 30 minutes

COGNITIVE: INTELLECTUAL EFFECTIVENESS

ENTRY CONCEPTS:	MATERIALS:
--The ability to spell --The ability to react quickly	Anagrams (separate small wooden squares with a letter printed on each)

TEACHER TASKS:	STUDENT		
	ENABLING BEHAVIORS:		LEARNINGS:
	The student:	*In order to:*	
INTRODUCTION: The teacher displays the game and discusses the rules of the game. (1) All letters are turned face down on the surface. (2) The children take turns turning over individual letters until someone spots a word spelled out. (3) If the word is correct, that child gets the total number of points listed on each letter square.	listens absorbs 	comprehend understand	the rules of the game. 

LESSON DEVELOPMENT:

1. The students begin playing the game and continue to do so until someone achieves the goal set by the group, such as 100 points.

EVALUATION:

The teacher will ask the students if they acquired any new words while playing the game.

Did it help their spelling process?

Did it increase their capabilities of spotting a word quickly?

Did they like the game?

How did they feel when playing the game?

uncovers recognizes analyzes	synthesize construct	the spelling of words.
responds	identify	new words.
	build	vocabulary.

The student will increase his vocabulary skills, his spelling skills, and his eye-hand coordination through the use of manipulative materials.

Concept/Competency

DIDACTIC GAMES: SYMBOLIC

Specific objects contain common properties.

Number Hunt

Developed by: Carole Draper

LEVEL K - 6 TIME 30 minutes

INTELLECTUAL EFFECTIVENESS

ENTRY CONCEPTS:

--The ability to ascertain that certain objects may contain common properties.

TEACHER TASKS:

COGNITIVE:

INTRODUCTION:

The teacher will explain to the child that he will learn what to do by reading the directions given in the mini-center.

LESSON DEVELOPMENT:

1. The student is to answer questions found in the mini-center in relation to these shapes: (following page)

From the book, IDEAS FOR LEARNING CENTERS, by Elaine Moore and Jerri Greenlee. Copyright ©, 1974 by Fearon Publishers, Inc. Reprinted by permission of Fearon Publishers, Inc.

MATERIALS:

Mini-learning Center
Pencil
Paper

STUDENT

ENABLING BEHAVIORS:		LEARNINGS:
The student:	*In order to:*	
examines	answer	specific questions about the attributes of certain shapes in relation to certain numerals.

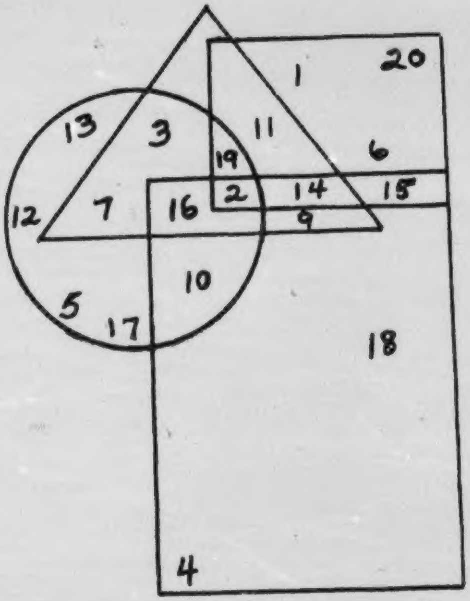
Number Hunt

2. The questions are:

(1) What numbers are in the rectangle but not in the circle, square or triangle?
(2) What numbers are in the triangle but not the rectangle?
(3) What numbers are in the square but not in the circle?
(4) What numbers are in the rectangle but not in the triangle and square?
(5) What numbers are in the square but not in the rectangle?
(6) What numbers are in the circle but not in the rectangle?
(7) What is the sum of the numbers in the square only?
(8) What is the sum of the numbers in the rectangle only?
(9) What is the sum of the numbers in the circle only?
(10) What is the sum of the numbers in the intersection of the circle and square? (Intersection: the area where the geometric figures overlap.)
(11) What is the sum of the intersection of the triangle and square?
(12) What is the sum of the intersection of the square, rectangle and triangle?

EVALUATION:

The teacher and students will discuss the answers to the questions. The students will design their own questions in relation to the shapes and numbers.



Given the opportunity to do this exercise, the student will become aware that many ideas, objects, numbers, concepts, etc., have common attributes.

Concept/Competency

DIDACTIC GAMES: SYMBOLIC

Words can be formed by the interchange of a group of letters.

MAGIC SQUARE

Developed by: Carole Draper

LEVEL K - 6 TIME 15 - 30 minutes

COGNITIVE: INTELLECTUAL EFFECTIVENESS

ENTRY CONCEPTS:	MATERIALS:
--The ability to spell --To possess a basic vocabulary	Mini-learning center Paper Pencil

TEACHER TASKS:	STUDENT ENABLING BEHAVIORS: The student:	In order to:	LEARNINGS:
INTRODUCTION: The teacher will explain that the child is to read the directions at the mini-center which will explain what he is to do.	listens	understand	procedure.
LESSON DEVELOPMENT: 1. The child is to list as many words as he can form from the letters in the magic square. Each of these letters must touch each other.	indicates lists	discover	words created by the interchange of specific letters.

Magic Square

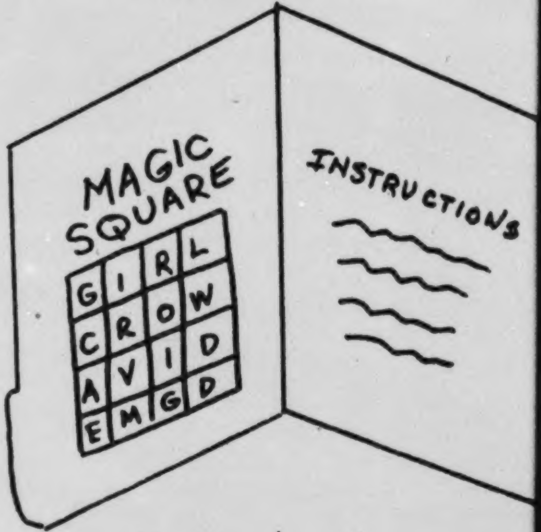
G	I	R	L
C	R	O	W
A	V	I	D
E	M	G	D

Such words include: girl, crow, grid, arrow, mirror, grow, give, row, came, rave.

EVALUATION:

The teacher and students will discuss the words the students discovered. The students will create their own magic square.

8½ x 11 File Folder


MAGIC SQUARE
G I R L
C R O W
A V I D
E M G D
INSTRUCTIONS

Mini-Learning Center

Through the use of a "magic square," the student will become more proficient in forming words and improving his spelling capabilities.

ALPHABET APPETITE

Developed by: Carole Draper

Concept/Competency

DIDACTIC GAMES: SEMANTIC

A story can be written which uses the alphabet as a pattern for the words to be used.

LEVEL K - 6 TIME 20 - 30 minutes

COGNITIVE: INTELLECTUAL EFFECTIVENESS

ENTRY CONCEPTS:

--The ability to know the sequence of the alphabet

MATERIALS:

Pencil
Paper

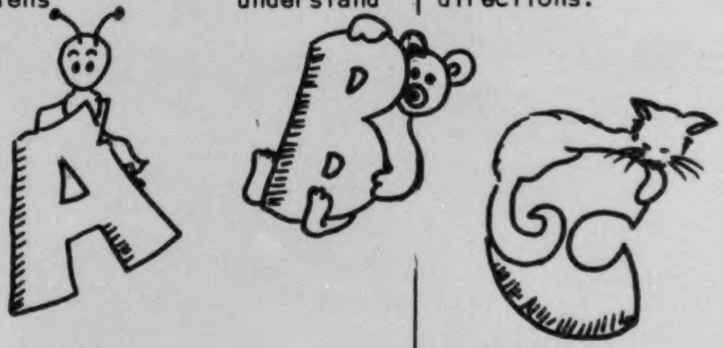
TEACHER TASKS:

INTRODUCTION:

The teacher will explain that the students are going to write an alphabet story. They are to write their story according to the sequence of the alphabet. Thus, the first word will begin with A, and the last word will begin with Z. The child may include other words if necessary in order to have the story make sense.

STUDENT

ENABLING BEHAVIORS: The student:	In order to:	LEARNINGS:
listens	understand	directions.



Concept/Competency

DIDACTIC GAMES: SEMANTIC

Alliteration is a technique used to promote creative writing.

Fast Freddie Fights Fires

Developed by: Carole Draper

LEVEL K - 6 TIME 20 - 30 minutes

COGNITIVE: INTELLECTUAL EFFECTIVENESS

ENTRY CONCEPTS:

--To possess a broad-based vocabulary

MATERIALS:

Paper and pencil

TEACHER TASKS:

STUDENT

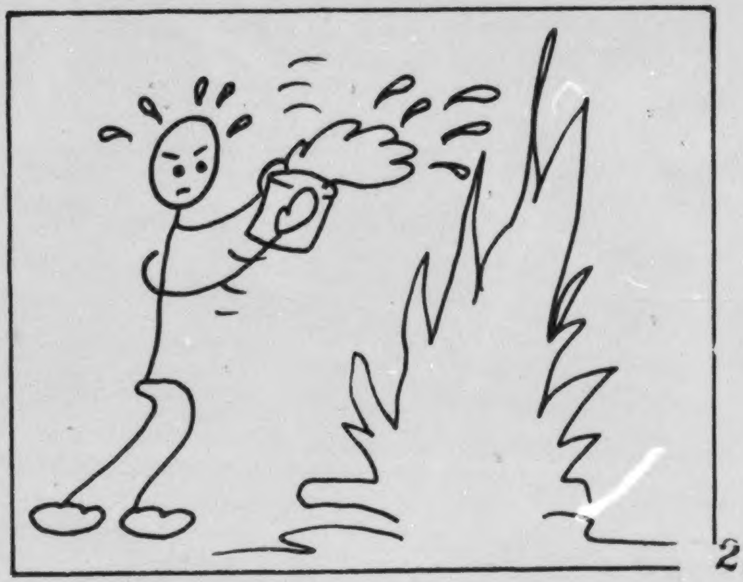
ENABLING BEHAVIORS:

The student: *In order to:*

LEARNINGS:

INTRODUCTION:

The teacher will explain what alliteration is: A form of expression whereby all the words, or the main words, in a sentence or short verse begin with the same letter. For example: "Fast Freddie Fights Fires Furiously" or "Silly Sue Saved Sausages Since Saturday."



Alphabet Appetite

LESSON DEVELOPMENT:

1. The student will write a creative story, using the alphabet in sequential order. He may write on any topic he wishes -- real or imaginary.

EVALUATION:

The students will share their stories with each other.

- - - - - - - - - - - - - - - - - -

ALPHABET STORY
By Patti Drake
(HIP Student)

An ant and a bear came to a dam where an elephant found a goldfish. He had indulged himself to a jaybird he had killed. The lion mangled the bird. "Now," said the fish. "Open that pest." Mr. Quail walked up to the rest by the dam. Mr. Quail said, "To mangle with someone else's bird is to make a wrong understanding of yourself." The lion vowed never to mangle with no bird other than his own. "Moral of this story is never mangle with stuff that isn't yours," said the Zebra.

(X word is missing.)

writes
creates
imagines
develops

compose
produce

a written story.

Given the alphabet, the student will write a creative story putting his words in sequential order according to the alphabet.

Fast Freddie

LESSON DEVELOPMENT:

The student will write 5 sentences (or as many as they want) or verses using an alliterative form.

EVALUATION:

The students will share their compositions with each other.

The student will be able to create a brief sentence, phrase or short verse in alliterative form.

writes records composes formulates	arrange and create	phrases, sentences or short verse in alliterative form.

KATE

Concept/Competency

DIDACTIC GAMES: SEMANTIC

Specific words have specific meanings.

Developed by: Carole Draper

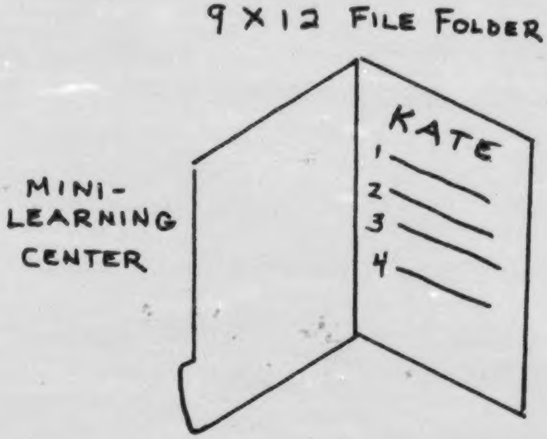
LEVEL 4 - 6 TIME 30 minutes

INTELLECTUAL EFFECTIVENESS

ENTRY CONCEPTS: The ability to use a dictionary.	MATERIALS: Mini-Learning Center Paper and pencil Dictionary

TEACHER TASKS:	STUDENT ENABLING BEHAVIORS: *The student:*	 *In order to:*	 LEARNINGS:
COGNITIVE: INTRODUCTION: The teacher will explain that the child is to use the mini-center to find out what he is to do. The teacher will encourage the child to read and follow the directions for himself.			
LESSON DEVELOPMENT: 1. The child will have a specific number of words from which to choose the correct response to questions concerning their definitions. The words are: indicate adjudicate syndicate lubricate allocate eradicate educate authenticate reciprocate	chooses	decide	correct response to the question.

2. The questions the child will answer are: (a.) How can Kate spread her knowledge? (b.) How can Kate keep the wheels turning? (c.) How can Kate point the way? (d.) How can Kate give a fair share? (e.) How can Kate act as judge? (f.) How can Kate declare it's the real thing? (g.) How can Kate repay in kind? (h.) How can Kate weed out and eliminate? (i.) How can Kate pool together?	names	tell meaning	of selected word.
3. The child may need to use the dictionary to find out the meaning of some or all of the words.	finds	gain knowledge of	the meaning of a particular word.



EVALUATION:

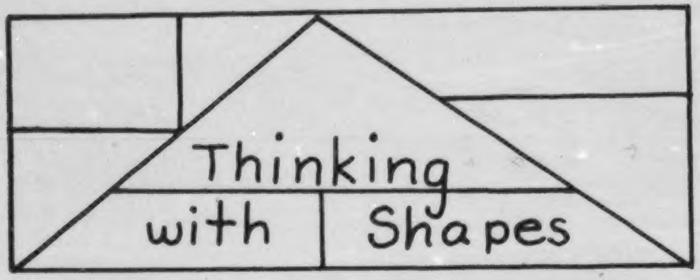
The teacher and students will discuss the answers to the questions. The teacher will ask the students to write or discuss orally other sentences for these words.

The student will be able to differentiate among a group of words having "cate" as an ending.

ANSWERS:
a. educate
b. lubricate
c. indicate
d. allocate
e. adjudicate
f. authenticate
g. reciprocate
h. eradicate
i. syndicate

Adapted from Games To Improve Your Child's English by Abraham B. Hurwitz and Arthur Goddard, Simon & Shuster, Inc. © 1969. Used with permission from Simon and Shuster, Inc.

Lettering from Fantastic Alphabets, Larcher, Jean, Dover Pub., Inc., 1976.



Developed by: Susan Sager

Concept/Competency

SOI LESSONS - FIGURAL

We can perform all five thinking operations--Cognition, Memory, CoNvergent Production, Divergent Production, and Evaluation--on Figural content.

LEVEL 1 - 4 TIME *2 45-min. periods.*

COGNITIVE: INTELLECTUAL EFFECTIVENESS

ENTRY CONCEPTS:

When dealing with figural content, we can notice likenesses/differences in shape, size, color, complexity, directionality, and other attributes.

MATERIALS:

Pattern blocks;
Duplicated study pages and test pages from the SOI-M Workbook, p. 49;
Tangram puzzles; pencils and crayons;
Dittos of "skeleton" drawings;
Box of kitchen matches.

TEACHER TASKS:	STUDENT ENABLING BEHAVIORS: *The student:*	 *In order to:*	 LEARNINGS:
INTRODUCTION:			
Say: "In this class we have done a lot of work with Figural content. That means shapes, sizes, colors, lines and so on.	listens	review	concepts dealing with Figural content.
Today we are going to think about shapes in several different ways. Did you know that your brain can do five kinds of thinking?"	listens and observes	grasp	the concept that there are five intellectual operations: cognition, memory, convergent production, divergent production and evaluation.
(Write each phrase on the board and then read it aloud:)			

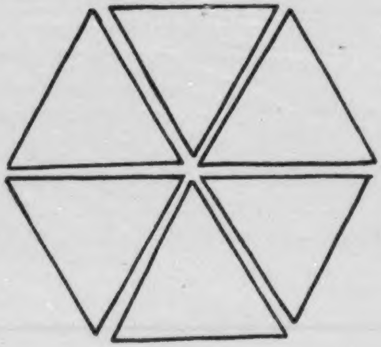
Thinking About Shapes

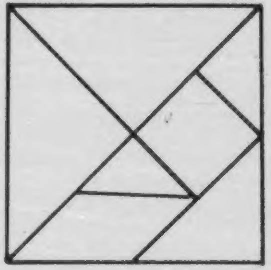
1) Cognition--Recognizing shapes
2) Memory--Remembering shapes
3) CoNvergent Production--Producing known shapes
4) Divergent Production--Creating new shapes
5) Evaluation--Making choices about shapes

Cognition Memory CoNvergent Production Divergent Production Evaluation	of Figural	Units Classes Relations Systems Transformations Implications	CSU CSC MSR NSS DST ESI

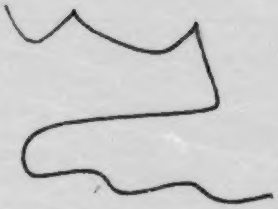
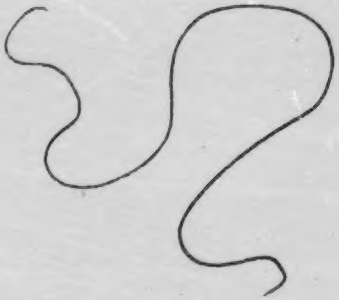
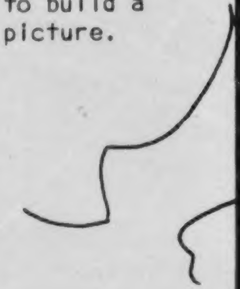
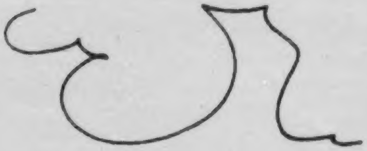
LESSON DEVELOPMENT:

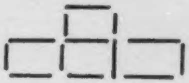
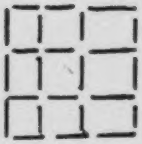
1. Say: "For our first thinking activity--Cognition--we will use the Pattern Blocks."	listens	identify	the process and material to be used for the first activity.
(Gather the children into a circle on the floor and give a generous portion of blocks to each one. Allow time for free exploration.)	manipulates blocks	determine	their characteristics.
Holding up different shapes one by one, ask: "What's this?"	observes blocks	identify	individual shapes.
To lead students to classify and analyze, ask such questions as: "Which shapes have 3 sides? 4 sides? 6 sides? Which small shapes can be put together to make other, bigger shapes? Which big shapes can be taken apart to make other, smaller shapes? You will be able to use these blocks again during your free period, if you wish."	examines	discover	ways to classify blocks, relationships among the shapes; modular characteristics of the blocks.



Say: "For our second thinking activity--Memory--we will use these study pages. Later, we will use test pages to help you test your memory of these shapes."	listens	identify	the process and material to be used for the second activity.
(Direct the children to take seats at tables. Distribute study pages duplicated from SOI-Memory Workbook, p. 49. Ask the students to study the pairs of figures and inform them that they will be asked to draw the members of each pair. Allow the students to study the pages for approximately 60 seconds.	studies page	memorize	related pairs of figures.
Remove the study pages and present the test pages. Ask the student to draw the missing member of each pair. Provide pencils. Ask the students to turn their papers face down as soon as they complete the task.)	recalls	draw	the missing members of related pairs of figures.
Say: "For our third thinking activity--CoNvergent production--we will use tangram puzzles. A tangram is a square that has been sectioned into seven pieces. Your task is to take these seven pieces and reproduce the system--that is, to reform the original square. As you have discovered during your previous work with tangrams, there is only one way to do this. With most CoNvergent production tasks, there is only one right answer."	listens 	identify	the process and material to be used for the third activity.
(Distribute manila envelopes containing tangram pieces. Place the model square on the chalkboard tray so that the children can see the figure they are to reproduce. Allow time for work.)	organizes	construct	a square from the seven tangram pieces.

"When you have formed the square, see if you can form these other shapes from the same seven pieces: the triangle, the parallelogram, the rectangle, and the trapezoid." (As you name each shape, place its model in the chalk tray. NOTE: These further tasks involve NFT--CoNvergent production of Figural Transformation.)	listens	identify	the additional figures to be formed with the tangram pieces.
To encourage insight and analytical thinking, say: "Using two of your triangle pieces, can you form a square? a bigger triangle? a parallelogram? Put your seven-piece square together again. Do you see the two several-part triangles that it is made of?	organizes	construct	a square, a triangle, and a parallelogram using two triangle pieces only.
Do you see how you could make a seven-piece triangle? parallelogram?	organizes	construct	a square, a triangle, and a parallelogram and then a rectangle and a trapezoid, using all seven pieces.
What transformations would you have to make? What further transformations would you have to make to produce a rectangle? a trapezoid?	states	describe	the processes used to construct each figure.
When you have finished these tasks, replace the tangram pieces in their envelope."			

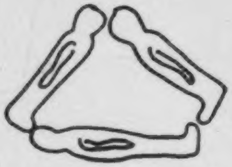
4. Say: "For our fourth thinking activity--Divergent production--we will use 'skeleton' drawings, like this one." (Hold up a dittoed 'skeleton' drawing.) "In the last kind of thinking we did--CoNvergent production--we looked for the one right answer. In this kind of thinking--Divergent production--there is no one right answer. Many, many different solutions are possible."	listens 	identify	the process and material to be used for the fourth activity.
Hold up the drawing one way and ask: "What does this line make you think of?" Rotate the drawing and ask: "Now what does it remind you of?" Rotate the drawing twice more. Each time ask: "Now what could it be part of?" (Allow time for many possible answers.) Say: "This is called a 'skeleton' drawing because it is just the bare bones of a drawing. You have to supply the flesh. You are to build a drawing around this line.	examines 	discover	many possible ideas on which to build a picture. 
Everybody will have a different idea, and everybody's drawing will be different from every other drawing. When you finish, this original line should still be visible and should be a logical part of the drawing you have created. You may begin." (Allow time for students to develop drawings.)	imagines 	create	an original drawing built around a "skeleton" line.
5. Say: "For our fifth thinking activity--Evaluation--we will be doing some match tricks. You will try to decide the best solutions to the problems presented."	listens	identify	the process and material to be used for the fifth activity.

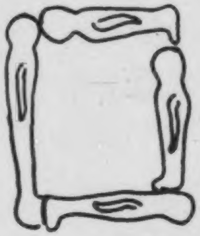
(Gather the children into a circle on the floor. Lay out four squares composed of 13 matches like the diagram right.) Say: Can you remove just one match and have three squares left? There must be no matches left over. They must all help to form squares. Can you figure out before removing any matches which one would be the right one to remove?"	examines 	discover	possible ways to solve the first match problem
(Give each child a chance to visualize the best match to remove and then have him check it out be removing it.)	experiments	test	his choices of possible solutions to the problem.
When a student discovers the solution, ask: "How did you decide that that would be the right match to remove?"	states	explain	the reasons for his decision.
(Now lay out nine squares composed of 24 matches like the diagram right:) Say: "Can you remove exactly eight matches and have two squares left? As before, there must be no matches left over. They must all help to form squares. Can you figure out before removing any matches which ones would be the right ones to remove?"	examines 	discover	possible ways to solve the second match problem.
(Give each child a chance to visualize the best matches to remove and then have him check it out by removing them.) If the students seem baffled, say: "What if the two squares don't have to be the same size?"	experiments	test	his choices of possible solutions to the problem.

(If the children are still unable to choose the correct solution, tell them that they may think it over and try again another day.)

EVALUATION:

Say: "You have done a good job of thinking today. Which activity did you like best? What was hardest? How did you feel when you were trying to draw those figures from memory?	evaluates	appraise	his feelings about and attitudes toward the five thinking activities.
We have been working with geometric figures today. How about some living geometry? Can three of you, lying on the floor, form a human triangle? Can four of you form a square? a parallelogram? Can six of you form a hexagon?"	moves	model	"living" geometric figures through psychomotor activities.





Given the opportunity to use and observe others usin the five intellectual operations on figural content, the student will demonstrate the ability to recogniz classify, notice relations between, complete pattern arrangements of, notice changes that have been made and extrapolate information from items of figural content.

Adapted from SOI Abilities Workbook by Mary Meeker, Ed.D., and Dennis Shadduck. Used with permission by SOI Institute.

"Students need to learn far more than the basic skills. For children who may still be in the labor force in the year 2030, nothing could be more wildly impractical than an education designed to prepare them for specific vocations or professions or to facilitate their adjustment to the world as it is. To be "Practical" an education should prepare them for work that does not yet exist and whose nature cannot even be imagined.

This can only be done by teaching them how to learn, by giving them the kind of intellectual discipline that will enable them to apply man's accumulated wisdom to new problems as they arise--the kind of wisdom that will enable them to recognize new problems as they arise."

Charles E. Silberman

Thinking with Symbols

Developed by: Susan Sager

Concept/Competency

SOI LESSONS - SYMBOLIC

We can perform all five thinking operations--Cognition, Memory, CoNvergent Production, Divergent Production, and Evaluation--on Symbolic content.

LEVEL 1 - 2 TIME 2 45-min. sessions

INTELLECTUAL EFFECTIVENESS

ENTRY CONCEPTS:

--Ability to deal in a rudimentary way with numerals and letters

MATERIALS:

Copies of dittoed HIP Puzzle--Scrambled Animals;
Dittoed exercise based on SOI-C Workbook, p.82;
Xeroxed exercise from SOI-N Workbook, p. 107;
Pencils, crayons, chalkboard, chalk;
All 5 SOI Workbooks for teacher information

TEACHER TASKS:

COGNITIVE

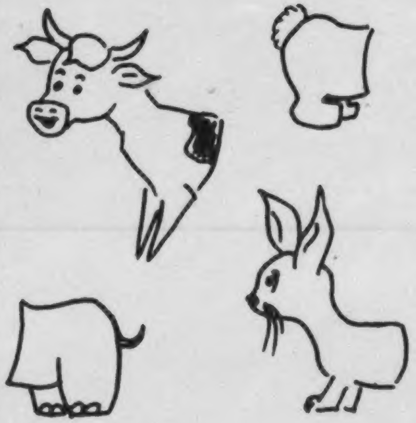
INTRODUCTION:

Say, "Since you have been at school, you have learned a lot about Symbolic content such as numerals and letters...Symbols are signs that stand for something else. For example, this (writing a numeral 4 on the board) can stand for these (drawing 4 apples). And this (writing an s on the board) can stand for the sound - 'ssss'."

"Today we are going to think about symbols in several different ways. Do you remember the 5 kinds of thinking that your brain can do?" (Write each phrase on the board and then read it aloud.)

STUDENT

ENABLING BEHAVIORS: The student:	In order to:	LEARNINGS:
listens	learn or review	the meaning of the term, symbolic content.



Thinking About Symbols

(1) Cognition - Recognizing Symbols
(2) Memory - Remembering Symbols
(3) CoNvergent Production - Producing correctly the required symbols
(4) Divergent Production - Generating new ideas from symbols
(5) Evaluation - Making decisions about symbols

LESSON DEVELOPMENT:

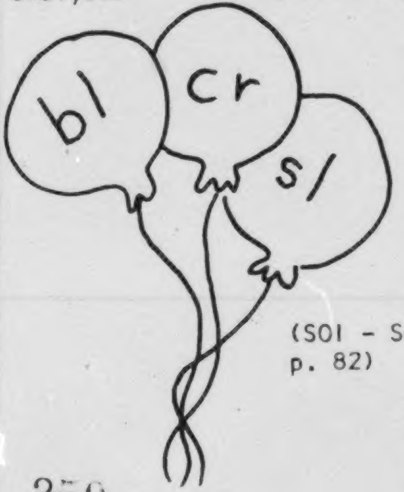
1. "For our first thinking activity - Cognition - we will use these special HIP Puzzles and worksheets." Distribute HIP Puzzles, worksheets, pencils and crayons.

"This HIP Puzzle is called Scrambled Animals. Can you tell what animal names these letters will spell when they are 'unscrambled' and written in the correct order?" (Allow time for comments.) "You may take this puzzle home and share it with your family.

Now look at the worksheet with picture of balloons. Each balloon has a word written on it containing an initial consonant blend like 'bl-'. Underline all the consonant blends that are the same. Then color all the balloons with the same blend the same color. Then find a different initial consonant blend and underline it in each word where it appears. Choose a different color for this group of word balloons. Do this for each different group of initial consonant blend word balloons. When all are colored, draw a string from each balloon to the bow."

Cognition
Memory
CoNvergent Production
Divergent Production
Evaluation
} of Symbolic {
Units CSU
Classes CSC
Relations MSR
Systems NSS
Transformations DST
Implications ESI

listens	identify	the process and material to be used for the first activity.
observes	determine	what animal names will be correctly spelled when the letters are placed in the proper order.
analyzes	classify	words into categories according to the initial consonant blend which they contain.



(SOI - See p. 82)

2. (While the students are completing the cognition task, write the following pairs of numbers on the board for the Memory task.)	listens and observes	identify	the process and material to be used for the second activity.

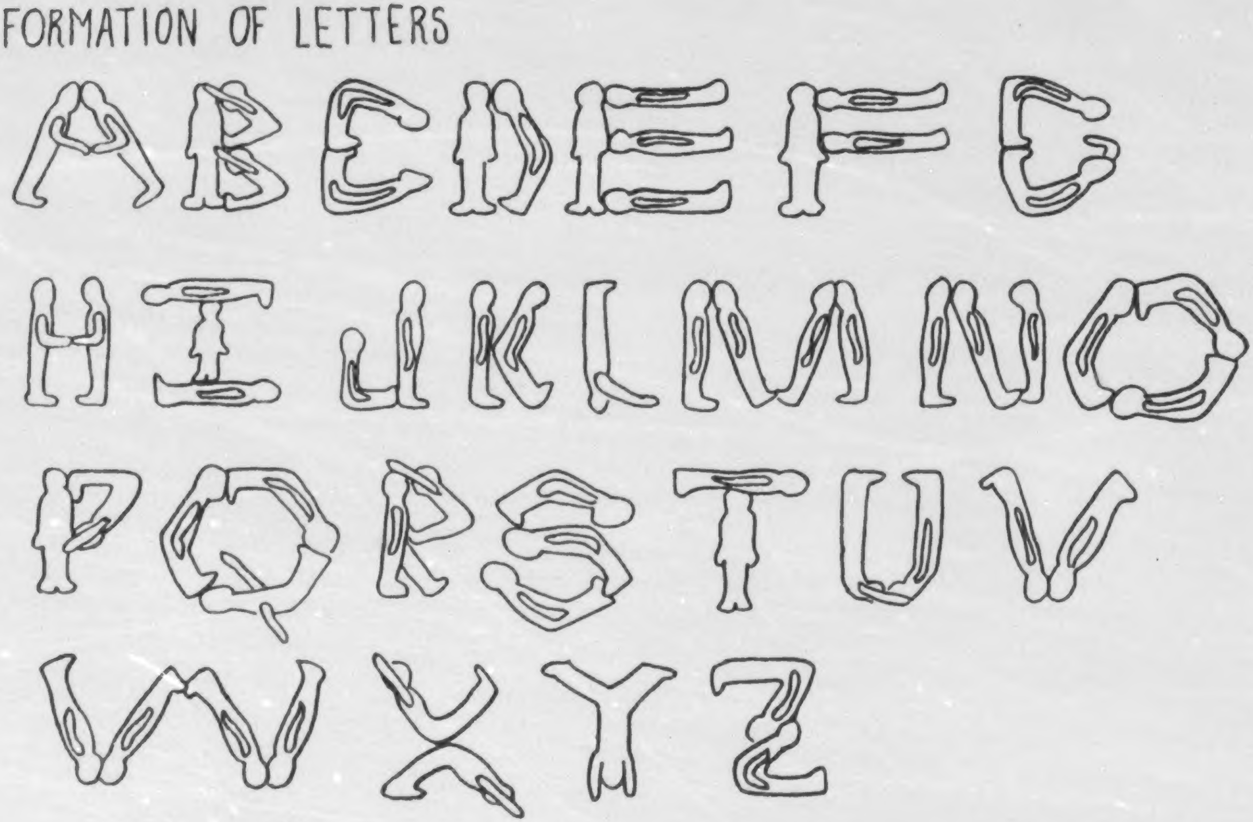
(1)	(2)	(3)	(4)	(5)
6 - 10 4 - 8	12 - 13 1 - 2	8 - 4 10 - 5	5 - 15 4 - 12	2 - 12 3 - 18

"For our second thinking activity--Memory-- we will look at the numbers in the boxes. Look at each two pairs of numbers. What relation is involved? (Allow the students to examine and discuss, in turn, the two pairs of numbers in each box.) Notice and remember the relation involved in each two pairs of numbers. You will be required to describe these relations from memory." (Allow the students to study the board for approximately 60 seconds. Erase.)	studies	memorize	the relation involved in each two pairs of numbers.
"Now...Mike, can you describe the relation involved in the two pairs of numbers in box (1)?" (Continue calling on different students to describe the relation involved in each two pairs of numbers.)	recalls	describe	the relation involved in a set containing two pairs of numbers.
3. "For our third thinking activity - coNvergent production - we will use these worksheets with triangular patterns of ordered numbers and letters." (Distribute worksheets. As the students are looking them over, write the following example from the SOI-N Workbook, p. 106, on the board.)	listens and observes	identify	the process and material to be used for the third activity.

1 2 3 4 5 6 __ ? __ __ (A) 7 (B) [✓ 8] (C) 9 (D) 10 (E) 11 (Explain how the pattern was completed to obtain the answer. Allow time for discussion.)			
"Figure out the ordered pattern of numbers or letters in each triangle on your worksheet. Then choose the correct missing number or letter from the five alternatives given, and circle it. You may begin."	examines	isolate	the items needed in order to complete ordered patterns of numbers and letters.
4. "For our fourth thinking activity - Divergent production - we will play a game called "Guess My Rule."	listens	identify	the process and material to be used for the fourth activity.
(Ask a student to name two numbers. Respond with one number - the addition or subtraction of the two figures given by the student, for instance. Continue in this manner until a student thinks that he has discovered a rule for naming the number. Then test his discovery by asking him to respond to two numbers that you give. If he does so correctly, have him verbalize the rule. See the SOI-D Workbook, p. 77, #1.)	plays a game	discover	the rule by which three numbers are related.

5. "For our fifth thinking activity - Evaluation - we will look at given letter sets and then at three alternatives. You will try to judge which of the three-letter combinations is most like the given standard."	listens and observes	identify	the process and material to be used for the fifth activity.
(Write the following from the SOI-E Workbook, p. 97, on the board.) A. oes 1. oit 2. orr 3. ocr B. lee 1. ret 2. boo 3. cor C. cde 1. cbc 2. hij 3. dek D. dod 1. bug 2. dec 3. gog "Look at set A. The standard given is oes. Which three-letter alternative is most like the standard given? Why?"	considers	judge	which of three alternative letter combinations is most like the given standard.
(Continue in this manner with the rest of the items. Each time, allow discussion and ask a student to verbalize the reason or rule.)	considers	conclude	why the alternative chosen is most like the standard given.
EVALUATION: You have now done five thinking activities with symbols. Which one did you like the best? Which was hardest? Why?	evaluates	appraise	his feelings about and attitudes towar the five thinking activities.
You have been working with symbols today. Can you build 'living' numerals or letters by lying on the floor? Who can be a 1? Can two of you form a 2? a 3? Can three of you form a capital A? B? etc."	moves	model	"living" numerals and letters through psychomotor activities.

Given the opportunity to use and observe others using the five intellectual operations on symbolic content, the student will demonstrate the ability to recognize, classify, notice relations between, complete patterned arrangements of, notice changes that have been made in, and extrapolate information from, items of symbolic content.



(Formation of Letters)
Adapted from Action in Learning by
Emma M. Langhorst and Marie L. McPherson.
Ideal School Supply Co., Oak Lawn, Ill.,
1974.

(Thinking With Symbols Unit)
Adapted from SOI Abilities Workbook
by Mary Meeker, Ed.D., and Dennis
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Picture Perfect

Developed by: Carole Draper

Concept/Competency

SOI LESSONS: SEMANTIC

Information can be ordered into a verbally meaningful experience.

LEVEL K - 1 TIME 30 min.

COGNITIVE: INTELLECTUAL EFFECTIVENESS

ENTRY CONCEPTS:
The student is aware that stories have a logical sequence - beginning, middle, end.

MATERIALS:
Several pictures from a familiar story

TEACHER TASKS:	STUDENT		
	ENABLING BEHAVIORS:		LEARNINGS:
	The student:	*In order to:*	
INTRODUCTION: The teacher will read a story to the students several times, displaying the pictures as she reads. This enables the child to become familiar with the story sequence.	listens and absorbs	comprehend and recognize	the sequence of events in the story.
LESSON DEVELOPMENT: 1. The teacher arranges pictures of the story in a scramble fashion along the chalk tray.	observes	recall	sequence of the story.

Picture Perfect

2. The teacher has a child rearrange the pictures to show the logical sequence.

3. The teacher may continue doing this activity with other stories and pictures.

EVALUATION:

The teacher will ask the students such questions as:

---What occurred at the beginning of the story?
---What happened in the middle?
---What events occurred at the end?
---Can you tell me what the sequence of the story is?
---Can you make up your own story and illustrate it so we can unscramble your pictures?

Source:
SOI Materials, "Cognition", p. 172

Adapted from SOI Abilities Workbook by Mary Meeker, Ed.D., and Dennis Shadduck. Used with permission by SOI Institute.

rearranges

demonstrate

the logical sequence of the story.

Given several pictures from a familiar story, the student will be able to successfully demonstrate the logical sequence of a story.

Concept/Competency

Polygons

Developed by:
Susan Sager

BASIC GEOMETRIC FIGURES

Polygons can be classified by counting and comparing their sides and angles.

LEVEL K - 2 TIME 1 hour +

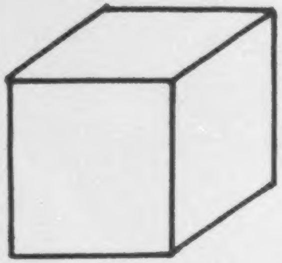
INTELLECTUAL EFFECTIVENESS

ENTRY CONCEPTS:

Experience gained from lightly-directed play with design blocks, tangrams, and a variety of other geometric forms, and from lightly-directed activities with rulers and protractors.

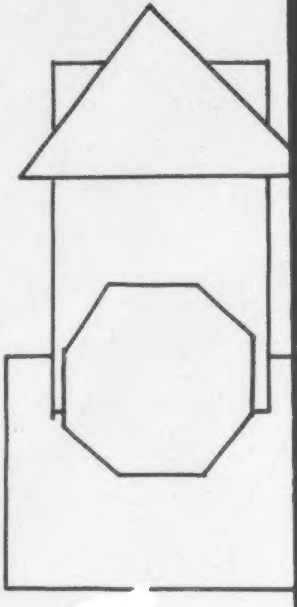
MATERIALS: A variety of triangles and regular quadrilaterials, plus one example of each of the regular polygons with five through ten angles;
Rulers and protractors;
Chalkboard and chalk

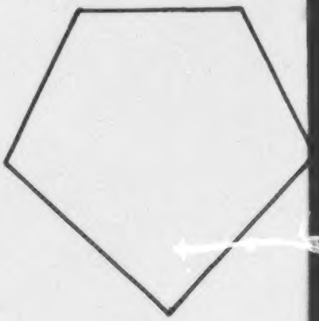
COGNITIVE:

TEACHER TASKS:	STUDENT		
	ENABLING BEHAVIORS:		LEARNINGS:
	The student:	*In order to:*	
INTRODUCTION: Say: "You have had the experience of handling many different plane and solid geometric figures.	listens/ responds	review	concepts about plane and solid geometric figures.
What does plane mean?	(flat;		
How many dimensions does a plane figure have? What are they?	two; height, width)		
What does solid mean?	(bulky;		
How many dimensions does a solid figure have? What are they?	three; height, width, thickness)		

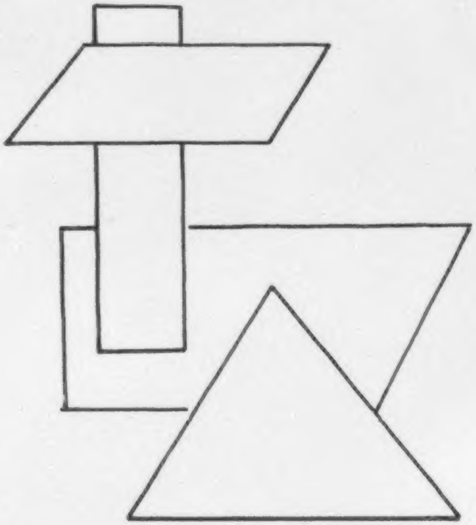
Polygons

Today we will be working with plane figures, which are called polygons. The word polygons comes from the old Greek language. Poly- means many and -gons means angles." (Write word elements and their meanings on the board.)	listens	acquire	new vocabulary.
LESSON DEVELOPMENT:			
1. "Here are some examples of polygons. What do you notice about them?	responds (Answers will vary.)	demonstrate	knowledge of concepts and vocabulary relating to polygons.
How would you define the word polygons? Does your definition fit all these figures?	(A polygon is a plane figure with three or more angles.)		
Figures with three angles are called ________. Tri- means ________.	(triangles; three.)		
Figures with four sides are called quadrilaterals. So quadr- must mean ________ and laterals must mean ________.	(four; sides)		
Figures with more than four angles are named according to how many angles they have. This figure has ________ angles. It is called a pentagon. So penta- must mean ________."	(five; five)		
(Continue in the same way with a hexagon, heptagon, octagon, nonagon, and decagon, each time listing the new word element and its meaning on the board.)	(etc.)		



2. "What might you see around you that is shaped like a triangle?	responds (Certain traffic warning signs, etc.)	demonstrate	the ability to relate mathematical concepts to life experience.
Like a rectangle?	(Speed limit signs, mileage signs, etc.)		
What famous building in Washington, D.C. is based on the figure that has five angles?	(the Pentagon)		
What could you eat or walk on that might be shaped like a hexagon?	(certain snack crackers or floor tiles)		
What do you see every day that is shaped like an octagon?"	(stop signs)		
3. Divide the class into two groups and say: "I will give all the triangles to one group and all the quadrilaterals to the other group. I will display the rest of the polygons in the chalk tray." (Distribute the figures.)	listens	identify	the processes and materials to be used in the lesson.
"What characteristics do these figures have that you can notice?	examines	isolate	specific characteristics of plane figures.
See if you can classify your figures into several groups according to some characteristics they have in common. For example, do the corners of any figures fit exactly into the angle where floor and wall meet or where two walls meet? This is called a right angle."	investigates	detect	figures which have one or more right angles.
(Allow time for the students to handle and discuss the figures and devise their own systems of classification.)	analyzes	establish	suitable categories.

"Triangle people, what categories have you established?" (List on chalkboard.)	responds	describe	a system for classifying triangles.
"Quadrilateral people, what categories have you established?" (List on chalkboard.)	responds	describe	a system for classifying quadrilaterals.
"All right. Now, I am going to trade off the figures so that each group gets a chance to work with both kinds. Also, I am now going to give you some additional tools to work with--rulers and protractors.	listens	determine	procedures to be used for further checking characteristics of plane figures.
Examine the figures again and see if you need to revise your categories." (Allow time for this activity as before.)	examines	isolate	additional characteristics of plane figures in order to revise system of classification.
"Triangle people, on what basis did you devise or revise your categories?	responds (comparison of sides) (comparison of angles)	describe	a revised system of classification.
What categories did you finally agree on?" (Record elicited category descriptions in organized, parallel form. As you read each one aloud, provide the correct name for the category.)	(all three sides equal; two sides equal; no sides equal)		(equilateral triangle; isoceles triangle; scalene triangle)
	(one angle a right angle; one angle greater than a right angle; one angle much less than a right angle)		(right triangle; obtuse angle; acute angle)

"Quadrilateral people, on what basis did you devise or revise your categories?	responds	describe (comparison of sides) (comparison of angles)	a revised system of classification.
What categories did you finally agree on?" (Record category descriptions and provide correct names as before.)		(two equal parallel short sides and two equal parallel long sides;	(rectangle or parallelogram;
		four equal sides;	square or rhombus;
		one short side parallel to one long side and two equal sides parallel to each other)	trapezoid)
		(four right angles;	(square or rectangle;
		two obtuse angles diagonally opposite and two acute angles diagonally opposite;	rhombus or parallelogram;
		two obtuse angles side by side and two acute angles side by side)	trapezoid)
4. "After we evaluate our lesson on polygons, you may create symmetrical designs using these shapes. You may use pattern blocks, design blocks, or graph paper, rulers, and colored pencils. Do you think you could build three-dimensional as well as two-dimensional symmetrical designs?"	listens	determine	the procedures and materials to be used for the creative activity following the formal lesson.

EVALUATION:			
5. "What did you learn about polygons today? What did you learn about the process of classification? Do you think it is important to be able to describe in words relationships that you can see? Why? What might help you to do this even better?"	considers	judge	the effectiveness of the lesson.

Given the opportunity to become familiar with polygons, relate them to shapes seen in the environment, compare and analyze them, create designs with them, and evaluate learnings about them, the student will devise a logical system for classifying polygons based on counting and comparing sides and angles.

Snakes
and
SWANS

Developed by: Susan Sager

Concept/Competency

SHAPE PERCEPTION - SYMMETRY

When an arrangement of figures has bilateral symmetry, one half of the arrangement is the reflection or mirror image of the other half.

LEVEL K - 2 TIME 2 30-min. periods

INTELLECTUAL EFFECTIVENESS

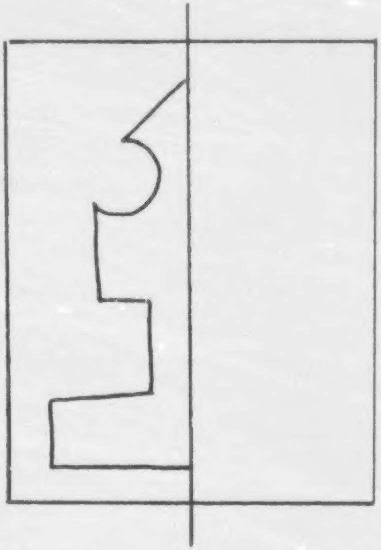
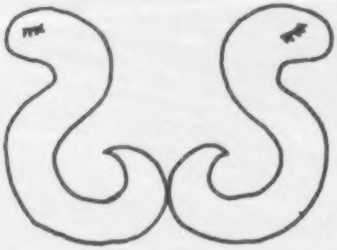
ENTRY CONCEPTS:

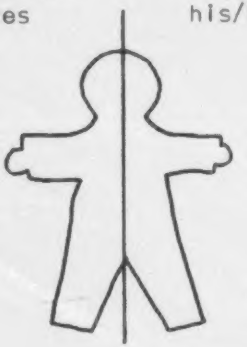
--Ability to recognize left-to-right directional orientation in figural items

MATERIALS:
Chalkboard and chalk; Yard sticks & label cards;
Exercises with 4 half-designs to be completed;
Snakes and Swans puzzles, or equivalent;
Two sets of square silhouette cards - snakes and swans (backs and fronts have opposite orientations)
White mimeo paper and scissors

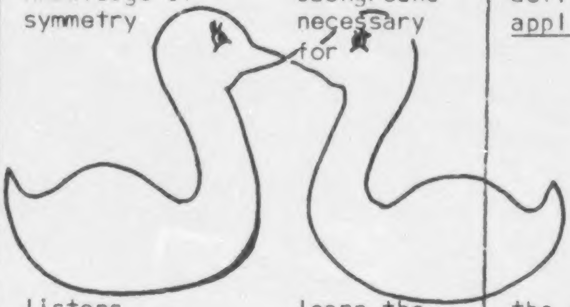
COGNITIVE:

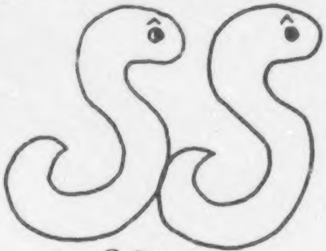
TEACHER TASKS:	STUDENT ENABLING BEHAVIORS: The student:	In order to:	LEARNINGS:
INTRODUCTION:			
Say: "Today we are going to learn about something interesting called symmetry. Symmetry is much easier to show than to tell about. So we will be doing some fun activities that will make it clear to you what symmetry is.	listens	become aware that	there is something unfamiliar but interesting called symmetry.
LESSON DEVELOPMENT:			
1. (Draw a large rectangle on the chalkboard. Draw a vertical axis down the center. Tell the students what you are doing.)	observes and listens	become oriented to	the first activity--building a base of knowledge and comprehension.

Then say: "Pretend the rectangle is a piece of paper. Pretend that you folded the paper along its axis and cut a design like this" (Starting at the axis, draw a shape in one half of the rectangle, similar to the one in the illustration.)	uses his/her imagination 	visualize	the result caused by the action of folding and cutting paper.
Ask: "When I unfold the paper, what will happen? What will it look like? Who would like to draw the other half of the design?"	predicts a result	demonstrate	comprehension of one kind of cause/effect relationship.
(Have a student draw the missing half of the design in the empty half of the rectangle.) 	draws the missing half of a symmetrical design	demonstrate	the psychomotor ability to produce the accurate reflection of an outlined shape.

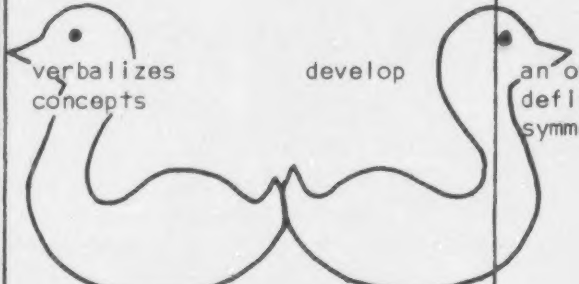
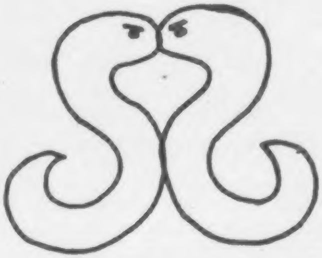
Verbally summarize the concept: "Now we have a symmetrical design. One half reflects the other half. One half is the mirror image of the other half. It is identical...except that it points in the opposite direction. This design has bilateral--or two-sided--symmetry on a vertical--or up-and-down--axis.	listens and observes	assimilate and integrate	the concepts: symmetrical reflection mirror image vertical axis bilateral symmetry.
Here are some more half designs, so that everyone can try drawing the missing halves. You will be completing designs with bilateral symmetry on a vertical axis. (Distribute duplicated sheets with four half designs in rectangles for students to complete.)	completes unfinished symmetrical designs	reinforce	psychomotor skills and concepts involving symmetry.
After most of the students have had a chance to complete the designs, say: "Many things in nature have bilateral symmetry, including people." (Facing the group, stand stiffly, feet slightly apart, arms out, like a fold-and-cut paper doll.) Say: "Imagine that there is a line right down the center of me--a vertical axis. What do you notice?" (Discuss.)	listens and observes 	extend his/her	understanding of bilateral symmetry.
"People are bilateral in design. So are some other living creatures. Can you name some?" (Discuss.)	names creatures with bilateral symmetry	demonstrate	the ability to recognize examples of bilateral symmetry in the environment.

"People can also engage in bilateral activities. Watch what I do now."	listens, responds, and observes	develop an awareness that	the term bilateral can refer to function as well as to structure.
(Again, make a large rectangle on the board, with a vertical axis. Taking a piece of chalk in both hands, simultaneously draw both halves of a symmetrical design. Say that everyone who wishes to try this may do so during the free activity period that follows.)	observes and participates	see and demonstrate	a psychomotor activity involving bilaterality.
2. On another occasion, say: "Let's see how well you understand symmetry. Let's see if you can transfer what you know, and recognize symmetry in new and different situations." (Display the Snakes and Swans* puzzles, if available, or two identical abstract snakes and two identical abstract swans drawn on large squares of cardboard or cut out of wood.)	recalls knowledge of symmetry	develop background necessary for	the second activity--application.
Say: "I will hold up the two swans side by side several times. Each time I will do something to one or both swans. I will rotate it--turn it around--or reflect it--flip it over." (Demonstrate.)	listens and observes	learn the meaning of	the concepts: rotation reflection.
"Each time I make one of these transformations, tell me whether the two swans make a symmetrical arrangement on both sides of an imaginary line between them. Answer yes or no."	observes and responds	demonstrate	the ability to distinguish symmetrical and asymmetrical side-by-side arrangements of identical figures.



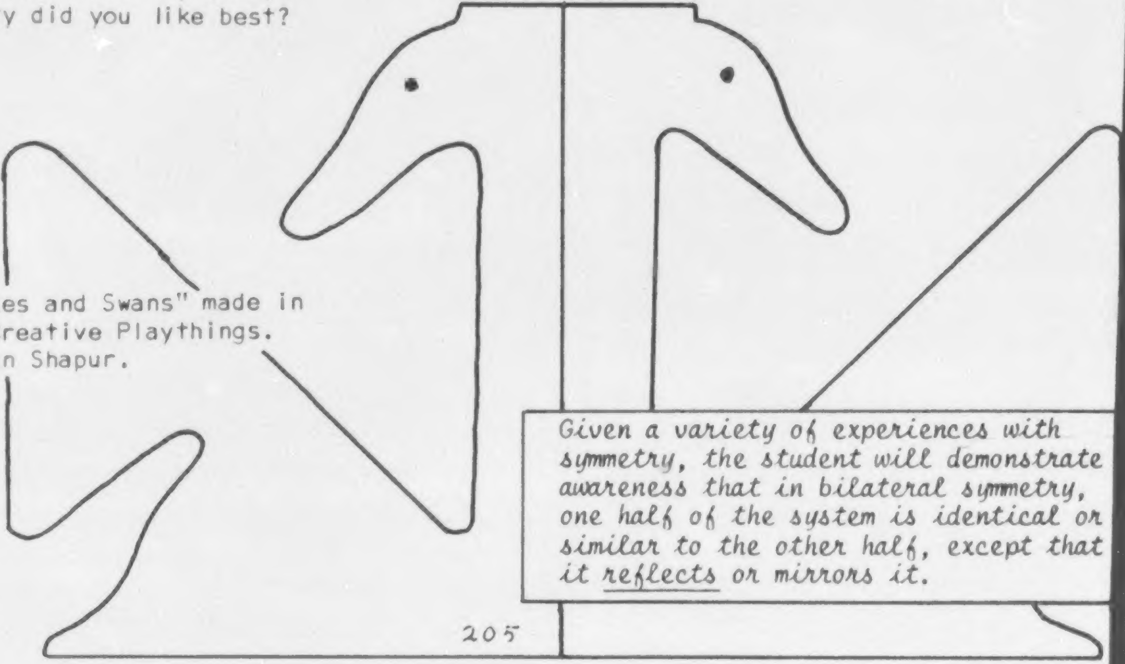


*See last page.

Change the orientation of the swans to one another several times, each time asking, "Is this a symmetrical arrangement?"			
(Do the same with the snakes, changing their orientation to each other on opposite sides of an imaginary vertical axis. Continue until the students can identify symmetrical and asymmetrical arrangements with assurance.)	observes and responds	demonstrate	the ability to generalize the concept of symmetry.
Elicit a generalization by saying: "How can we tell when an arrangement is symmetrical?" (See the Concept/Competency at the beginning of this lesson.)	 verbalizes concepts	develop	an operational definition of symmetry.
3. Say: "Now you will have a chance to arrange many pairs of identical cards side by side with different relationships to each other. Then you will classify each arranged pair as Symmetrical or Not-Symmetrical.	listens	determine	procedures to be used during the third activity--convergent production and analysis.
We will work in two groups. I will place two class label cards on the floor for each group, and separate them by a yardstick.			
Working with your group, you will arrange and correctly classify all the possible different side-by-side arrangements of two identical cards. How many such possibilities do you think there will be?"	arranges silhouette cards	discover	all the possible side-by-side symmetrical and asymmetrical arrangements of pairs of identical cards.

4. (Provide scissors and white paper. Have the students fold vertical axes, then cut a design with bilateral symmetry. Show them how to make various cuts. Tell them to try many kinds of cuts and make the designs as complex and beautiful as possible. Display the completed designs backed on colored construction paper. Provide a sentence-strip label that reads: Fold-and-Cut Designs with Bilateral (Line) Symmetry on a Vertical Axis.)	folds and cuts	engage in	the fourth activity--synthesis.
EVALUATION:			
5. Discuss: What do you know about symmetry that you didn't know before? Why do you think that it might be important to know about symmetry? Which activity did you like best? Why?	considers the lesson on symmetry	take part in	the fifth activity--evaluation.

*Purchase: "Snakes and Swans" made in Switzerland for Creative Playthings. Designed by Fredun Shapur.



Given a variety of experiences with symmetry, the student will demonstrate awareness that in bilateral symmetry, one half of the system is identical or similar to the other half, except that it reflects or mirrors it.

RAINBOW COLORS

Developed by Susan Sager

Concept/Competency

COLOR PERCEPTION

The "rainbow" colors of the six-color wheel are red, orange, yellow, green, blue, and violet. The primary colors are red, yellow and blue. The secondary colors mixed from them are orange, green and violet.

LEVEL K -2 TIME *One hour plus*

INTELLECTUAL EFFECTIVENESS

ENTRY CONCEPTS:
Different colors are produced when we mix various combinations of red, yellow and blue paint.

MATERIALS:
- Chalk, chalkboards
- Set of eight crayons for each student
- Prism, light source
- Newspaper
- Drawing paper
- Boxes of watercolors
- Water jars

COGNITIVE:

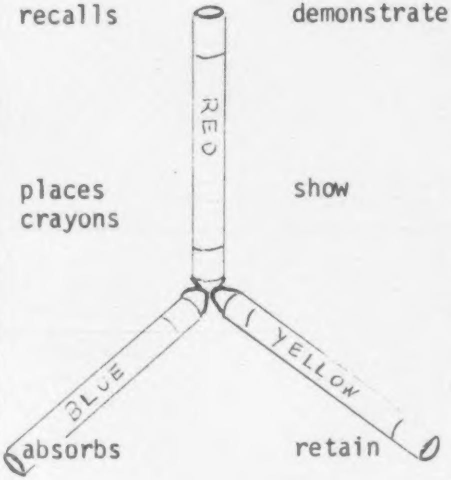
TEACHER TASKS:	STUDENT		
	ENABLING BEHAVIORS:		LEARNINGS:
	The student:	*In order to:*	
INTRODUCTION:			
Say: "Class, I would like you to close your eyes and think about color. Try to recall some of your experiences with color."	meditates	remember	many previous experiences with color.
(Allow time for recollection.)			
"Now, open your eyes. What facts can you tell me about color?"	recalls	state	as many facts as possible relating to color.
(Conduct concept diagnosis: Accept without comment all contributions, correct or erroneous, and list them on the board. This indicates the students' current level of knowledge about color.)			

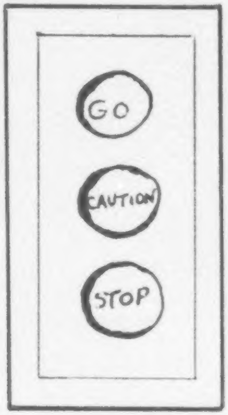
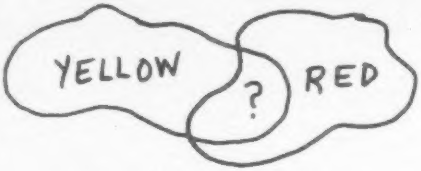
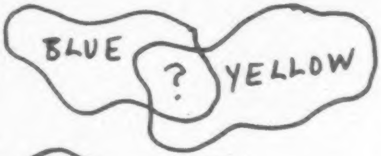
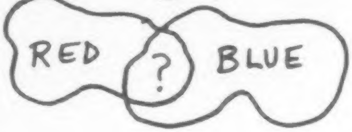
Rainbow Colors

"Today we are going to do some activities with color that may add to your knowledge about it." (Distribute boxes of crayons with eight colors.)	listens	determine	the procedures and materials to be used during the lesson.

LESSON DEVELOPMENT:

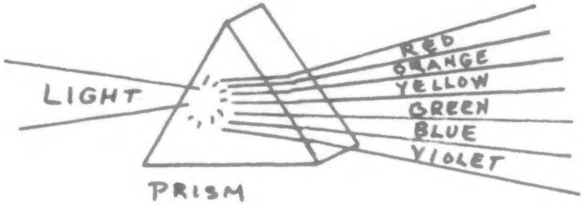
1. "When you paint, what three basic colors do you use that are not produced by mixing two other colors?	recalls	demonstrate	Knowledge acquired by previous paint-mixing experience with a limited palette of primary colors only.
Remove these three colors from your crayon box. Place them on the table with their points touching so that they are like the spokes of a wheel. Leave an equal amount of space between them, like three equal pieces of pie." (Allow students an opportunity to arrange crayons correctly.)	places crayons	show	ability to translate verbal instructions into tangible form.
"These are called primary colors. Prim- comes from the old Latin language. It means first." (Write the element and its definition on the board.)	absorbs	retain	information about English word elements that come from Latin.
"These colors are called primary colors because they are the first, most basic colors from which all other colors can be mixed. You can produce other colors by mixing two primary colors. Can you produce a primary color by mixing two other colors?	listens	learn	the definition of primary colors.



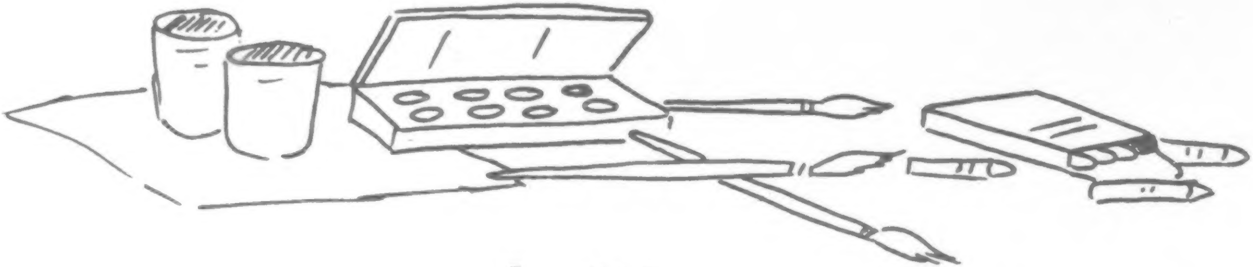
2. "Colors are used in many special ways. For example, some colors are used as signals. Can you think of some examples in which colors are used this way? What about red?" (etc.) 	reports (red-stop light, sign fire truck no parking zone yellow-caution light, sign school bus waiting zone green-go light mileage sign blue-signs indicating traveler facilities along highways orange-signs indicating road construction etc.)	relate	color concepts with general life experiences.
3. "What color would you get if you mixed red and yellow paint? Take that color and place it between the red and yellow crayons in your color wheel. What color would you get if you mixed yellow and blue? Place that color between yellow and blue. What color would you get if you mixed blue and red? Place that color between blue and red.	considers   	determine	how primary and secondary colors are related to each othe

Rainbow Colors

The colors we produce by mixing two primary colors are called secondary colors.	compares	distinguish	contrasting characteristics of primary and secondary colors.
You now have a six-color 'wheel'. Leave an equal amount of space between your 'spokes' like six equal pieces of pie. What does this six-color range remind you of? Why?	examines	discover	the similarity between a color wheel and a rainbow.
We will now create a rainbow right here in our room. To do this, we will shine white light through a prism in a dark room." (Set up and utilize this demonstration. Allow the students the opportunity to discuss the results.)	listens observes	investigate	the behavior of light with a prism.
This range of colors is called the spectrum. Spect- comes from the Latin word meaning to see." (Write the element and its definition on the board.)	examines	analyze	the etymology and meaning of the word spectrum.
The spectrum represents the range of colors we can see when white light is separated into the different colors that it is made up of. If you want to know more about how this works, look up the articles on color, light and rainbow in an encyclopedia."	investigates	discover	additional concepts about the nature of light and color.

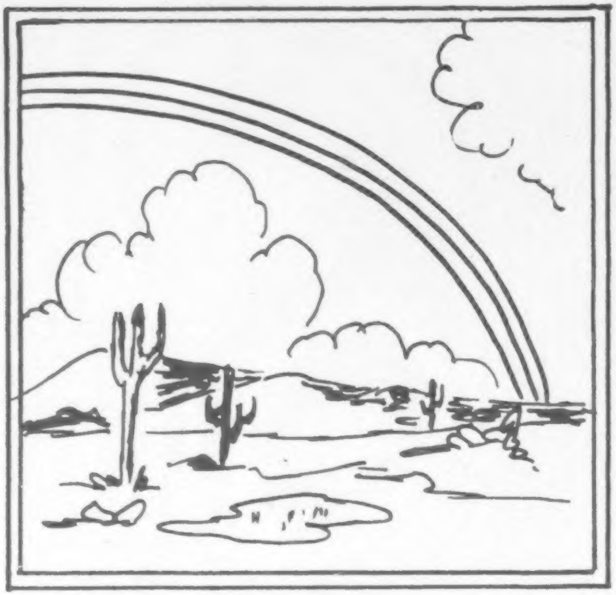


4. "Now you may create a crayon drawing of a rainbow. How will you arrange the colors? Which color will be on top? (Allow discussion of this point.) If students are divided between red and violet, say: "You're both right. Do you know how this is possible?"	hypothesizes	predict	how colors will be arranged in a rainbow.
(After allowing further discussion, explain the primary and secondary arcs of a complete rainbow.) "If you will put on your rainbow color very heavy and waxy, you may paint over your picture with watercolor and produce a watercolor crayon resist mixed media work."	listens	augment	knowledge of the characteristics of rainbows.
(Distribute newspapers and drawing paper. When the students are well advanced on their drawings, distribute boxes of watercolors and water jars.)	composes	create	an attractive watercolor crayon resist picture of a rainbow.



EVALUATION:

5. "Now let's look at the list of facts you dictated to me at the beginning of the lesson. Do we need to eliminate or modify any of these statements? What do we need to add? What have you learned about color today that you didn't know before?	appraises	decide	the correctness and completeness of previously listed statements about color.
And let's look at the watercolor crayon resist drawings. Which ones have rich colors that show brilliantly through the watercolor? Which ones have placed the rainbow in an interesting setting? Which look stormy and dramatic? peaceful and tranquil? How were these effects produced?	considers	evaluate	watercolor crayon resist pictures of rainbows.



Given appropriate experiences with color, the student will distinguish the primary and secondary colors and determine gradations in hue.

The DULL and BRIGHT of it!

Developed by Susan Sager

Concept/Competency

COLOR: INTENSITY

Pure colors are more intense and seem to advance -- in contrast with neutral colors which are less intense and seem to recede. A color is made increasingly neutral as more of its complement is added to it.

LEVEL K - 6 TIME 2 45-min. periods +

INTELLECTUAL EFFECTIVENESS

ENTRY CONCEPTS:	MATERIALS:
There seem to be several different kinds of any one color. Some kinds are brighter than others. Some are softer -- not as bright.	Color Wheel Large color intensity demonstration cards; Small paint color chips in a range of intensity for each primary and secondary color; Painting materials, including red, orange, yellow, green, blue, and violet tempera paints; Art prints

COGNITIVE:

TEACHER TASKS:	STUDENT		
	ENABLING BEHAVIORS: The student:	In order to:	LEARNINGS:
INTRODUCTION: Say: "Boys and girls, when we name a color, such as red, we may not all be talking about the same thing. There are many different kinds of red. Look around our classroom. Who has on a bright red shirt? Whose shirt is less bright -- a softer red?" (Repeat with several other colors.)	listens and observes	identify	different intensities of the "same" color (hue).
LESSON DEVELOPMENT: 1. Say: "When a color is as bright and clear as it can be, we say that it is pure. When it has been softened and changed until we almost can't recognize it any more, we say that it is neutral."	listens and observes	learn	the meaning of the terms pure/neutral and more intense/less intense.

(On the chalkboard, diagram the continuum: pure ⟷ neutral. Place demonstration cards from both ends of the red continuum under their respective labels.) Say: "Pure red......neutral red." (Repeat for yellow and blue.) Summarize: "Pure colors are more intense. Neutral colors are less intense."			
(Have pairs of students work together to arrange paint color chips for the primary and secondary colors in continuum series from pure (more intense) to neutral (less intense)).	arranges color chips	demonstrate	the ability to perceive gradations in color from more intense to less intense.
Ask: "If you were mixing colors, how would you make a bright pure color more neutral?"	hypothesizes	speculate	how pure colors can be made neutral.
(Allow students to experiment in mixing colors with tempera paints -- red, orange, yellow, green, blue, violet (no black or white). Lead them to notice what happens when a drop or more of its complement (opposite) is mixed with a pure primary or secondary color.)	experiments	determine	what happens when its complement is added to a pure color.
(Provide several large art prints for the students to analyze.)	examines art prints	distinguish	what pure colors seem to do in contrast to neutral colors.
Say: "Look at this print. What do the pure, bright colors seem to do?	(stand out, come forward, advance)		
What do the neutral, dull colors seem to do?	(be less noticeable, go back, recede)		

Why do you think the artist used pure, bright colors for this part of the picture?"	ponders	inquire	why artists choose intense colors for some areas of their paintings.
4. Say: "Today you will create your own paintings, using what you have learned in studying and experimenting with color. Decide which part of your picture will be most important -- which part you want to stand out or advance. What kind of colors will you use for that part?"	listens	determine	the purpose for and the procedure to be used in the activity.
	(pure colors)		
(Provide painting materials and informal guidance. Circulate among students and verbalize what each student is doing with pure and neutral colors.)	synthesizes learnings	create	a painting in which the intensity of colors is consciously controlled to produce desired effects.

EVALUATION:

5. Discuss: "Why is it important for artists to know about intensity in color? What other occupations might need to know how color intensity works and how it can be varied?"	considers	judge	which occupations require a knowledge of color and the ability to use it skillfully.

Given the opportunity to experience and use varied intensities of color, the student will demonstrate an understanding of the terms pure/neutral and more intense/less intense and the ability to use this understanding in his/her own work.

"We must cultivate talent in the way soil nurtures a seed. It provides for the growth of the seed but it does not tell the seed what to become."

--Sidney J. Parnes

"We are told by one and all to face reality. The question is, whose reality?"

--George Stoddard

"To construct and to create are quite different. A thing constructed can only be loved after it is constructed, but a thing created is loved before it exists."

--Gilbert K. Chesterton

The DARK and LIGHT of it!

Concept/Competency

COLOR - VALUE

Lighter colors seem to advance. Darker colors seem to recede. Tints of a color can be produced by adding a small amount of the color to white. Shades can be produced by adding black to the color. Gradations in lightness/darkness are called value.

Developed by Susan Sager

LEVEL K - 6 TIME 2 45-min. periods

INTELLECTUAL EFFECTIVENESS

ENTRY CONCEPTS:

There are several different kinds of any one color. Some kinds are lighter than the basic color. Some are darker.

MATERIALS:

Large value demonstration cards; small paint color chips in a range of value for each primary and secondary color; painting materials, including red, yellow, blue, black, white tempera paints; art prints emphasizing value

TEACHER TASKS:

STUDENT

COGNITIVE:

INTRODUCTION:

Ask: "Who is wearing the lightest color today? Who is wearing the darkest color? We are not including white and black as colors today. Who is wearing the lightest tint of red? Who is wearing the darkest shade of red?"

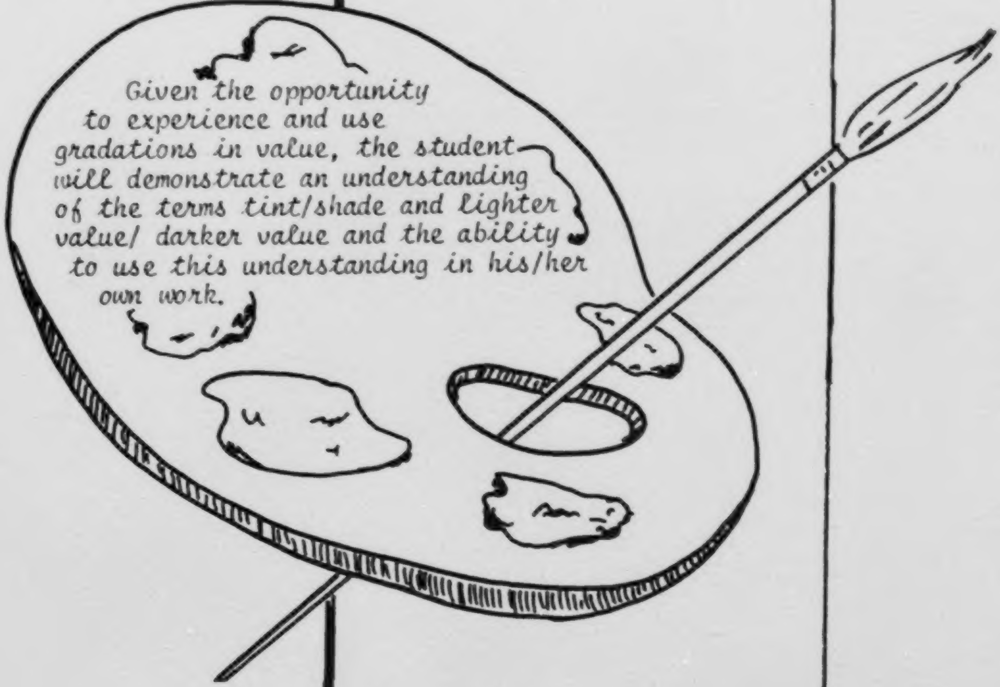
ENABLING BEHAVIORS: *The student:*	*In order to:*	LEARNINGS:
listens and observes	identify	different values of the same color--light/dark; tint/shade.

LESSON DEVELOPMENT:

1. Say: "We start with a bright, pure color. When we lighten the color, we say that it is a tint of the color. When we darken the color, we say that it is a shade of the color. The range of light and dark we see in a picture is called value." (On the chalkboard, diagram the continuum: tint ← pure color → shade Place demonstration cards for pure red and for both ends of its value continuum under the respective labels.) Say: "Pure red....tint of red....shade of red." (Repeat for yellow and blue.) Summarize: "Tints of a color are lighter than the color. Shades of a color are darker."	listens and observes	learn	the meaning of the terms tint/shade and lighter value/darker value.
(Have pairs of students work together to arrange paint color chips for the primary and secondary colors in a continuum series from tint (lighter value) through pure color to shade (darker value)).	arranges color chips	demonstrate	the ability to perceive gradations in value of a given color from lightest tint to darkest shade.

Ask: "if you were mixing colors, how would you make a pure color lighter? darker?	hypothesizes	speculate	how pure colors can be made lighter or darker.
2. (Allow students to experiment in mixing colors with tempera paints -- red, yellow, blue, white, black. Lead them to notice what happens when a drop or more of pure color is added to white; and when a drop or more of black is added to a pure color. Notice that lighter tints are mostly white; hence, color is added to white. Black darkens colors very quickly; hence, black is added to colors.)	experiments	determine	what happens when a pure color is added to white, and when black is added to a pure color.
3. (For analysis, provide several large art prints in which value is a more important element than hue.)	examines art prints	distinguish	what light colors seem to do in contrast to dark colors.
Say: "Which areas in this picture seem to advance or come forward? Which areas seem to recede or go back?		(lighter areas) (darker areas)	
We might compare light and dark value to being out in the sunlight or deep in a shadowy cave."			
4. Say: "Today you will have an opportunity to paint with a very 'limited palette'-- only black and white!	listens	determine	the purpose for and procedure to be used in the activity.
See how great a range of values you can mix. See if you can make parts of your painting advance -- come out in the sunlight -- and recede -- sink back into the shade."			

Provide painting materials and informal guidance. Circulate among students and verbalize what each student is doing with light and dark values.)	synthesizes learnings	create	a painting in which gradations in value are consciously controlled to produce desired effects.
EVALUATION:			
5. Ask: "Why are we able to 'see' what is happening in black and white photographs, even though the 'real' world is in full color? Why is value important?" Discuss.	considers	judge	why value is important in helping us see what is happening in photographs and in the real world.



Given the opportunity to experience and use gradations in value, the student will demonstrate an understanding of the terms tint/shade and lighter value/ darker value and the ability to use this understanding in his/her own work.

DIZZY DIRECTIONS

Developed by Susan Sager

Concept/Competency

PERSONAL SPATIAL ORIENTATION

Compasses help us to determine the cardinal and intermediate directions. We can determine our own location relative to given fixed points.

LEVEL K - 4 TIME *45 minutes*

INTELLECTUAL EFFECTIVENESS

ENTRY CONCEPTS:

The directions are north, south, east and west.

MATERIALS:

Compasses;
Large label cards for north, south, east, west;

Duplicated quizzes (optional)

COGNITIVE:

TEACHER TASKS:	STUDENT ENABLING BEHAVIORS: *The student:*	 *In order to:*	 LEARNINGS:
INTRODUCTION:			
Say: "We are always located somewhere in space. We can help to describe our location by referring to the points of the compass."	listens	comprehend	the concept of personal spatial orientation relative to the points of the compass.
(Show the students a compass or compasses. Allow them to examine it.)	examines a compass	become acquainted with	the structure and function of the compass.

Say: "This needle always points north. If we rotate the compass until the needle point lines up with the line labled N for north... then we can also determine which direction is south (S) and which directions are east (E) and west (W).	listens	become aware that	when the direction north is ascertained, the other three cardinal directions can also be determined.
LESSON DEVELOPMENT:			
1. (Place the properly aligned compass at a central place in the room. Provide four students with direction label cards with tape hinges on the backs and have them correctly label the four walls of the classroom.	places labels	identify	north, south, east, west walls of the classroom. (Vary according to the characteristics of the classroom.)
Ask the children to lie on the floor with their heads pointing north, legs tegether, arms straight out, so that the body forms a cross.)	lies in the shape of a cross	experience	a body image of the four cardinal points of the compass.
Ask: "When your head is pointing north.... which direction are your feet pointing? Which direction is your left arm pointing? Which direction is your right arm pointing?	responds	demonstrate	knowledge of the four cardinal points of the compass.
If you traveled the direction your head is pointing, where would you eventually come to? What might you see there?	extrapolates	visualize	eventual destination if northerly direction is persistently followed.
If you traveled the direction your legs are pointing, where would you eventually come to? What might you see there?"	extrapolates	visualize	eventual destination if southerly direction is persistently followed.

2. Have the students sit up. Say: "Girls, go and touch the north wall. Return. Boys, go and touch the south wall. Return. Girls, go and touch the east wall. Return. Boys, go and touch the west wall. Return.	touches designated walls	reinforce through psychomotor activity	a concept of the cardinal points of the compass.
Now, you are going to have to do some fast thinking. Nancy, go and stand in the northwest corner. Sam, go and stand in the southeast corner. Ed, go and stand in the northeast corner. Wendy, go and stand in the southwest corner. Very good, students. You are applying what you know about directions to a new situation."	relates previously learned facts	identify	the intermediate points of the compass: northwest, northeast, southeast, southwest.
3. Say: "Now I am going to ask you to stretch your minds a little further. People in the center of the room, what direction are we from the north wall? east wall? south wall? west wall? What direction are we from Nancy? Sam? Ed? Wendy? How did you figure this out? You are doing a good job of reasoning!"	performs mental transformations	deduce	his/her own direction relative to given fixed points.

4. (Have the children sit in four lines to form a square in the center of the room. The four edges of the square should be parallel to the four walls of the classroom.

Teach them to play a variation on "Alliterative Add-a-Word" in Games to Improve Your Child's English by Abraham B. Hurwitz and Arthur Goddard.

The first person in the north line says, "I went north and I saw n______ n_______," filling in any adjective and noun pair beginning with the letter n.

Play proceeds clockwise to the first person in the east line, the first person in the south line and the first person in the west line.

Each says a sentence containing his/her direction and an adjective and noun beginning with the same letter as his/her direction.

The game is cumulative. So when play proceeds to the second person in each line in turn, the second player repeats the adjective/noun pair contributed by the first player and adds a pair of his/her own.

plays a game

gain greater fluency in

production of alliterative adjective-noun pairs beginning with N, E, S, or W.

Examples:

I went north and I saw __________.

I went east and I saw __________.

I went south and I saw __________.

I went west and I saw __________.

Stress fluency.

(Responses will vary:)
...naughty nuisances
neat nephews, etc.
...endless elephants,
evil eagles, etc.

...sorrowful secretaries,
silly serpents, etc.

...wonderful weasels,
wild winters, etc.

EVALUATION:

5. When the students have had ample opportunity to become familiar with the directions and their personal orientation relative to the points of the compass, administer the following oral or written quiz:

(1) North is the opposite of __________.
(2) East is the opposite of __________.
(3) The __________ corner joins the south wall and the west wall.
(4) The __________ corner joins the north wall and the east wall.
(5) The west wall is between the ________ wall and the __________ wall.
(6) The south wall is between the ________ wall and the __________ wall.

When I am in the center of the room I am...

(7) __________ of the north wall;
(8) __________ of the east wall;
(9) __________ of the northwest corner;
(10) __________ of the southwest corner.

completes test items

judge

his/her mastery of concepts of personal spatial orientation relative to the points of the compass.

N

W

Given the opportunity to work with compasses and participate in a variety of activities, the student will be able to determine the cardinal and intermediate directions and to determine their own location relative to given fixed points.

S

...over time, a continuing and steadfast focus on the positive in life, on our strengths, and on the strengths of others can help to restore in our students their personal energy, their feelings of power, their sense of worth so that they can see themselves as positive forces who can contribute to the task of building a better world.

Robert C. Hawley
Human Values in the Classroom

Caterpillar: ...and who are you?

Alice: I...I hardly know, Sir, just at present--at least I know who I was when I got up this morning, but I think I must have changed several times since then.

Lewis Carroll
Alice in Wonderland

No more fiendish punishment could be desired, were such a thing physically possible, than that one should be turned loose in society and remain absolutely unnoticed by all the members thereof.

William James
The Principles of Psychology

The Magic Window

Developed by Susan Sager

Concept/Competency

GENERAL PERSPECTIVE

Clues for judging the location of objects in three-dimensional space - or their representation on two-dimensional plane surfaces are: (1) relative apparent size; (2) overlapping; (3) placement in the picture plane; and (4) relative intensity of color.

LEVEL 1 - 6   TIME *2-4 45 min. periods.*

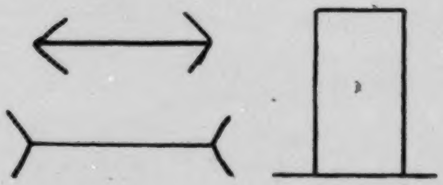
INTELLECTUAL EFFECTIVENESS

ENTRY CONCEPTS:
When we look at scenes around us, or at pictures of such scenes, we are able to judge that some objects are relatively near to us, while others are relatively far away.

MATERIALS:
Standard optical illusions mounted on large cards; study prints, photographs, slides, view-master sets; chalkboard and chalk or chart paper and marker; materials for collage-making and/or painting.

COGNITIVE:

TEACHER TASKS:	STUDENT ENABLING BEHAVIORS: *The student:*	 *In order to:*	 LEARNINGS:
INTRODUCTION: Say: "Today we are going to investigate some interesting things about seeing."			
(Show the students a series of standard optical illusions displayed on large cards. Ask the appropriate question about each one: Which line is longer? etc.)	views optical illusions	perceive	apparent relationships of lines and shapes in common optical illusions.
Subject each visual judgment to a reality check: Measure the lines, etc.	measures lines, etc.	determine	how the reality of these figures differs from their appearance.



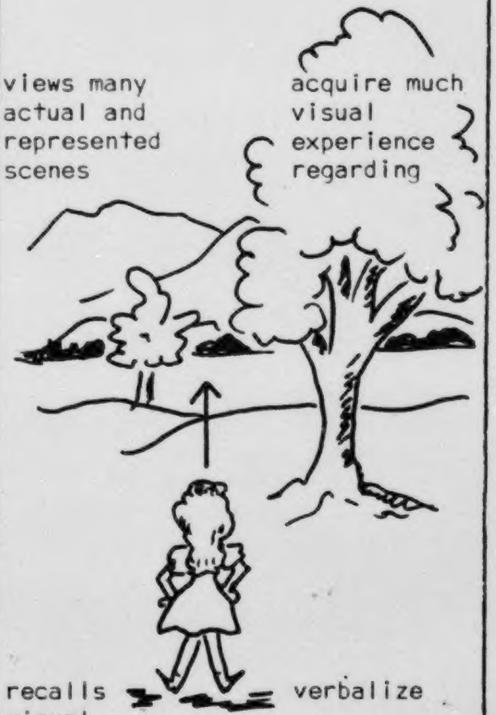
In summarizing, ask: "Can we always be sure that what we apparently see is what we know to be true? Why do things often appear to be different than they actually are? How were these optical illusions able to fool us?" Discuss.

LESSON DEVELOPMENT:

1. (The Knowledge/Comprehension activities for this unit consist of a wealth of opportunities for conscious seeing. It is fortunate if your schoolyard has an unobstructed view of a variety of objects in deep space - buildings, streets, trees, hills, mountain ranges, etc. But whether or not this is the case, seeing actual objects in three-dimensional space must be supplemented by many experiences with seeing study prints, photographs, slides and other two-dimensional representations of objects in space. This is essential, because comprehension of the analogies used to describe the appearance of objects that are nearer or farther from the viewer depends on the ability to compare what is seen to a picture hanging vertically on a wall - the plane of vision or picture plane.)

   After an experience of intensive seeing out-of-doors, ask:
   (How do we know these houses and trees are near to us, while those houses and trees are farther away? What are the visual clues?"

hypothesizes	consider	why appearances differ from reality.
views many actual and represented scenes	acquire much visual experience regarding	the clues which help us determine how objects are located in space.
recalls visual impressions	verbalize	clues that lead him/her to recognize that some objects are near and others are far.



(Elicit observations about apparent size, overlapping, placement in the plane of vision, and intensity of color.)			
2. (After returning to the classroom, have the students help to systematize and chart the results of the investigation. Material in parentheses may be omitted for younger children. Visual Clues to Near/Far (Linear Perspective) Size - larger/smaller Overlapping - in front of/in back of Placement - lower/higher (below horizon) higher/lower (above horizon) (Aerial Perspective) Color - more intense/more neutral less bluish/more bluish	organizes his/her observations	make	a chart presenting a list of visual clues to near/far.
3. Discuss and analyze: "Why do things which are farther away appear to be _______(than) things which are nearer?" ....smaller... ....in back of... ...higher in the picture plane (sometimes). ....more neutral or bluish in color...	ponders list of visual phenomena	discover	possible reasons for the visual clues to near/far.

4. (Depending on the maturity of the students, have them do, at different times, one or both of the following: (1) Have the students make collages - using geometric cutouts or magazine picture cutouts - which give the illusion of objects in space through differences in size, overlapping, and placement. (2) Have students paint pictures of three mountain ranges, one behind the other, representing depth through size, overlapping, and placement, as above - but primarily through differences in color intensity.)	engages in creative activities	synthesize and utilize	concepts about basic linear and aerial perspective.
EVALUATION:			
5. (Conduct a group critique of the artwork produced.) Ask: "Which collages/paintings give an especially effective illusion in deep space? Why?"	appraises art projects	decide	which works most successfully to create the illusio of objects in three-dimensional space.

Given experience with much conscious viewing of objects in three-dimensional space and their two-dimensional representations, the student will be able to determine the visual clues that help him/her judge the location of objects in space, and develop the ability to represent these relationships verbally on a chart and visually on a sheet of paper.

Concept/Competency

LINEAR PERSPECTIVE

In one-point perspective, horizontal lines which in reality are parallel
(1) remain parallel when parallel to the plane of vision;
(2) appear to converge and vanish at one point on the horizon when perpendicular to the plane of vision.

THE INCREDIBLE VANISHING POINT

Developed by: Susan Sager

LEVEL 3 - 6 TIME 2-4 45 min. periods

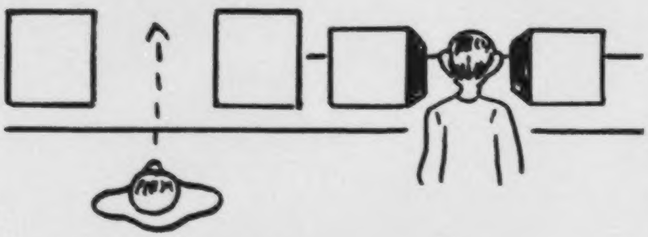
COGNITIVE: INTELLECTUAL EFFECTIVENESS

ENTRY CONCEPTS:
When two otherwise identical objects are located at widely different distances from the viewer, the near object sometimes seems to overlap -and appears to be larger, lower/higher on the picture plane, and brighter in color than- the far object.

MATERIALS:
Yardsticks, sheet of rigid clear plastic, cardboard cutouts of geometric plane figures, including rectangles and trapezoids; chalkboard and chalk; two cardboard boxes and low table; drawing materials, including rulers; dittoed incomplete drawings in one-point perspective.

TEACHER TASKS:	STUDENT		
	ENABLING BEHAVIORS:		LEARNINGS:
	The student:	*In order to:*	
INTRODUCTION: Review or introduce the terms vertical - horizontal - diagonal; perpendicular - parallel - converging; "magic window", picture plane, or plane of vision; rectangle - trapezoid.	listens and observes	learn or review	basic terms and concepts about lines and planes and their relationships in space
Have students demonstrate their meaning (1) with objects such as yardsticks, a sheet of rigid clear plastic, and cardboard cutouts; (2) with diagrams at the chalkboard.	manipulates objects and draws diagrams	demonstrate	comprehension of these basic meanings

LESSON DEVELOPMENT:

1. (Arrange two cardboard boxes on a low table parallel to the edge of the table, which represents the plane of vision. Have students kneel at a point midway between the two boxes and sight toward the "horizon." Have them state in their own words what seems to happen. Discuss.) 	observes objects in space	perceive and describe	Visual Illusions: 1. All verticals remain vertical. 2. Top and base lines of walls parallel to the viewers plane of vision remain horizontal and parallel and these walls remain rectangles. 3. Top and base lines of walls perpendicular to the viewer's plane of vision appear to converge toward a point on the horizon -- and these walls appear to become trapezoids.
2. (Have students to outside, take an analogous position, standing, between two one-story buildings, and sight toward the horizon. What happens? Have them mentally extend the roof and base lines of the perpendicular walls to the horizon. What happens?	makes additional observations	discover	the pattern of consistency and regularity in these visual phenomena.
Have students squat down well below normal eye level and sight toward the horizon. What happens?	sights at, below normal eye level and above	discover that	the horizon is synonymous with eye level and seems to sink or rise according to the position of the viewer.

Ask students to "put it all together" in their minds. What generalizations can be made as a result of these observations?)	organizes and relates observations	apply generalizations to	subsequent experiences in visual perception
3. (Have students attempt to explain: At normal eye level, why do roof lines of perpendicular walls seem to slant down, while base lines seem to slant up? Analyze and discuss.)	examines visual phenomena	explain	how or why these laws operate
4. (Depending on the maturity and interest of the students, have them engage in one or more of the following activities:			
(1) Give students dittoed drawings in one-point perspective with no visible construction lines or points. Have students lay rulers along roof lines and base lines of perpendicular walls and extend them to the horizon. What happens?	extends roof lines and base lines of perpendicular walls to horizon	make visible	construction lines and vanishing point used in producing the drawing
(2) Give students dittoed drawings in one-point perspective with no visible perpendicular walls -- but with a vanishing point marked on the horizon. Utilizing only what is given, have students correctly supply the missing walls, including the vertical edges where the buildings terminate.	rules lines from top & bottom "inside" corners of front walls to vanishing point; lays in verticals where side walls terminate	supply	missing perpendicular walls
(3) Interested students may be encouraged to construct simple or complex one-point perspective drawings from scratch.)	creates "building-scapes"	utilize	understanding of the rules of one-point perspective

EVALUATION:

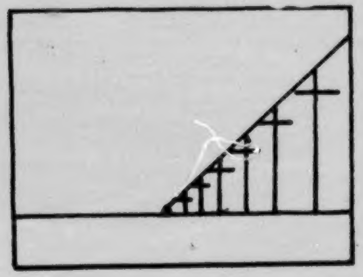
5. (After extensive experience in observing visual phenomena of one-point perspective, and translating, interpreting and analyzing these phenomena, have students tell, diagram, or write what would seem to happen under the following conditions:

You have an unobstructed view, stretching away to the horizon, of:

1. a road or railroad tracks
2. rows of trees or power poles
3. rows of clouds or hot-air balloons

....which you view while standing:

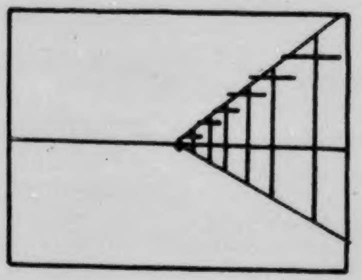
a. in a hole up to your eyes
b. on the level ground
c. on a mountain top.)



a. in a hole

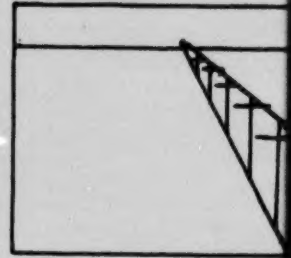
creates a mental picture based on verbal descriptions of visual situations

judge



b. on level ground

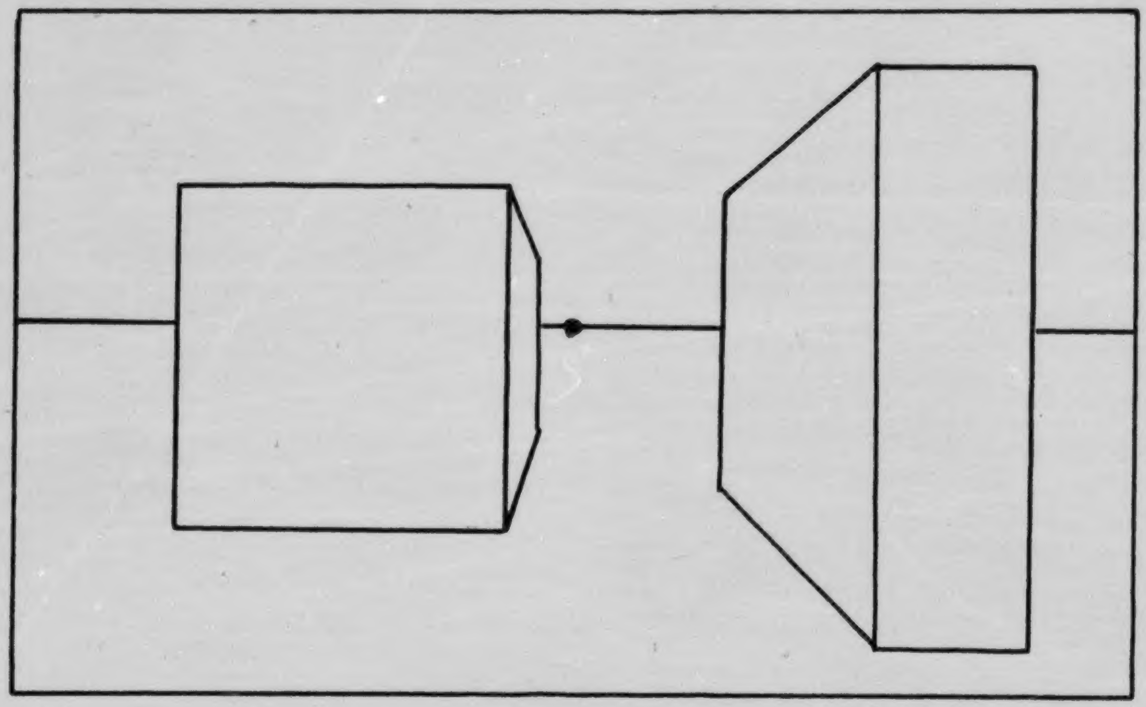
transformations that would occur in these visual illusions when the eye level of the viewer was raised or lowered

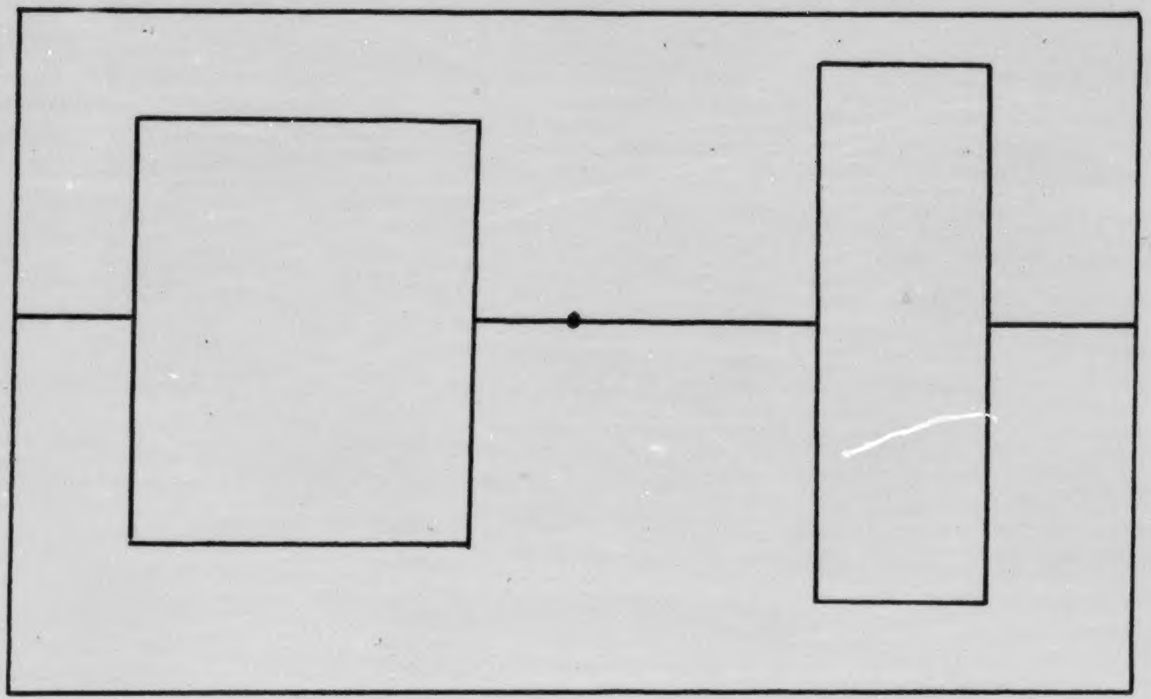


c. on a moun
top

Given extensive guided experience in viewing rectangular solids parallel to his/her plane of vision, the student will become aware of the importance of eye level and plane of vision in determining the appearance of objects in space, and will formulate and use the rules of one-point perspective.

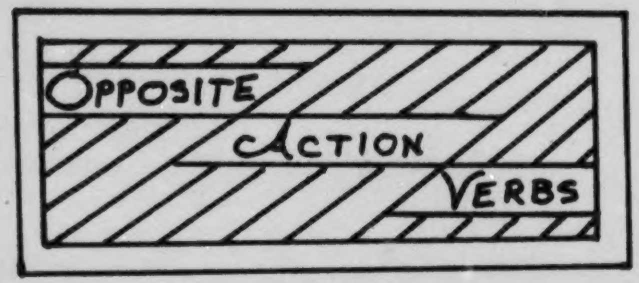
MODEL FOR FIRST INCOMPLETE PERSPECTIVE DRAWING





MODEL FOR SECOND INCOMPLETE PERSPECTIVE DRAWING

Concept/Competency



Developed by Susan Sager

Vocabulary Elements:
OPPOSITE ACTION VERBS

Recognizing specific elements in words leads to understanding the "basic" meanings of many large groups of words.

LEVEL 3 - 6 TIME 1 hour

COGNITIVE: INTELLECTUAL EFFECTIVENESS

ENTRY CONCEPTS:

Many English words contain elements from Latin and Greek.

MATERIALS:

Lists of words containing the bases
puls-, pel - (push)
tract- (pull)
Chalk, chalkboard
Pencils, paper

TEACHER TASKS:	STUDENT ENABLING BEHAVIORS: The student:	 In order to:	 LEARNINGS:
INTRODUCTION:			
Tell the students that many English words contain elements from Latin and Greek.	listens	review	word elements with which he is already familiar.
Introduce two new bases from Latin which are opposite action verbs: puls-, pel- (push) tract- (pull). List on chalkboard.	listens and observes	recognize	the contrasting bases meaning push and pull.

LESSON DEVELOPMENT:

1. Ask the students to think of as many words as they can which contain these elements. List them on the board in two contrasting groups.	recalls (impulse impel expell repulsive	list tractor traction retract subtract)	words that contain puls- pel- and tract.
2. Ask the students to pantomime the meanings of selected contrasting action words.	moves	differentiate	the meanings of words containing contrasting elements through psychomotor activity.
3. Teach the game "Derivation." Explain that many words can be derived from a single base word through the addition of prefixes and suffixes. Invite pairs of students to the board who wish to challenge each other. Call out a base word, and see who can write the most derived words in a given timed period. Write the words in columns. Example: pulse impulse repulse impulsive repulsive impulsively repulsively etc.	plays a game	produce	as many words as possible through the process of derivation.

Opposite Action Verbs

4. Ask the students to compose sentences of two independent clauses connected by /but/ to show (1) contrasts in the meaning of two base elements, and (2) contrasts in meaning that can result from using different prefixes with one base.	composes sentences Examples: (1) I found the lady attractive /but/ she found me repulsive! (2) The invaders propelled themselves toward the castle gate with a battering ram, /but/ the defenders repelled them by pouring boiling oil on them.	interpret	the meanings of
The emphasis here is on playing with the humorous possibilities of the words being studied, and on the enjoyment of language.			
EVALUATION:			
5. Instruct students to fill the blanks of incomplete sentences with words, containing studied elements, which are the most appropriate to the meaning of the sentences. They should be prepared to justify their choices.	considers alternatives	judge	the words most appropriate to the meaning of given sentences.
	appraises	weigh	the value of the just-concluded lesson on Latin elements in English words.

Given an opportunity to recognize, recall and use words containing the base elements puls-, pel-, and tract-, the student will demonstrate an understanding of the basic meanings and uses of two contrasting groups of words.

SILLY SENTENCES

Concept/Competency

FUNCTIONAL GRAMMAR

Grammar involves parts of speech with different forms and functions and the order or sequence in which words are arranged. It is the basic framework of the language on which we construct our meanings.

Developed by: Susan Sager

LEVEL 3 - 6 TIME 4 30-min. periods

INTELLECTUAL EFFECTIVENESS

ENTRY CONCEPTS:

--experience in working with parts of speech
--ability to identify adjectives, nouns, verbs, and adverbs

MATERIALS:

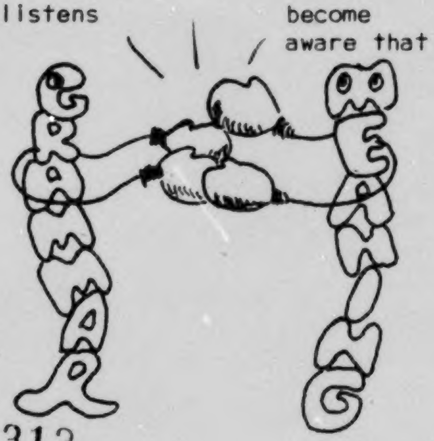
Duplicated word lists for analysis exercise; Chalkboard, chalk, writing paper, pencils; Dictionaries; Materials for drawing; Background sources on grammar for the teacher

COGNITIVE:

TEACHER TASKS:	STUDENT ENABLING BEHAVIORS: The student:	 In order to:	 LEARNINGS:
INTRODUCTION:			
Say: "You may have heard that 'grammar is a lot of nonsense'--especially from someone who has had an unhappy experience in an English class.	listens	become aware that	a commonly held attitude toward grammar states that "grammar is a lot of nonsense."
The statement is quite true in a sense. Absolute nonsense can be written in absolutely correct grammatical form."	listens	assimilate the idea that	a statement can be nonsensical in meaning while being quite correct in grammatical form.

Silly Sentences

After writing them on the chalkboard, say: "Witness the first four lines of 'The Jabberwocky' from Alice Through the Looking Glass: 'Twas brillig, and the slithy toves Did gyre and gimble in the wabe. All mimsy were the borogroves, And the mome raths outgrabe.'	reads and listens	become familiar with	the opening four lines of the famous nonsense poem,"The Jabberwocky."
These lines are perfectly 'grammatical'... but does anyone really know what they 'mean'?" (Discuss.)	responds and discusses	develop	the idea of structure versus content--grammar versus meaning.
LESSON DEVELOPMENT:			
1. Say, "Such stuff may be nonsense; but without the 'nonsense' called grammar, there could be no sensible sentences, either.	listens	realize that	without grammar, neither nonsense sentences nor sensible sentences would be possible.
Grammar is the basic framework of the language on which we construct our meanings.	listens	grasp	a definition of the term grammar.
Put certain parts of speech--nouns, verbs, and so on--in a certain order... and presto! You have a grammatical sentence--which may also be nonsense.	listens	become aware that	grammar involves parts of speech with different forms and functions--and the order or sequence in which the words are arranged.



Silly Sentences

After writing the seven headings below across the chalkboard, say: "Here's one possible sentence pattern. Can you fill it in with words to make a sentence?"	listens, observes, and contributes words	determine that	a given grammatical pattern or sequence can be filled in with words to make a sentence.

Adj.	Adj.	N	V	Adj.	N	Adv.
Example:						
Big	green	monsters	devoured	beautiful	ladies	rapidly.

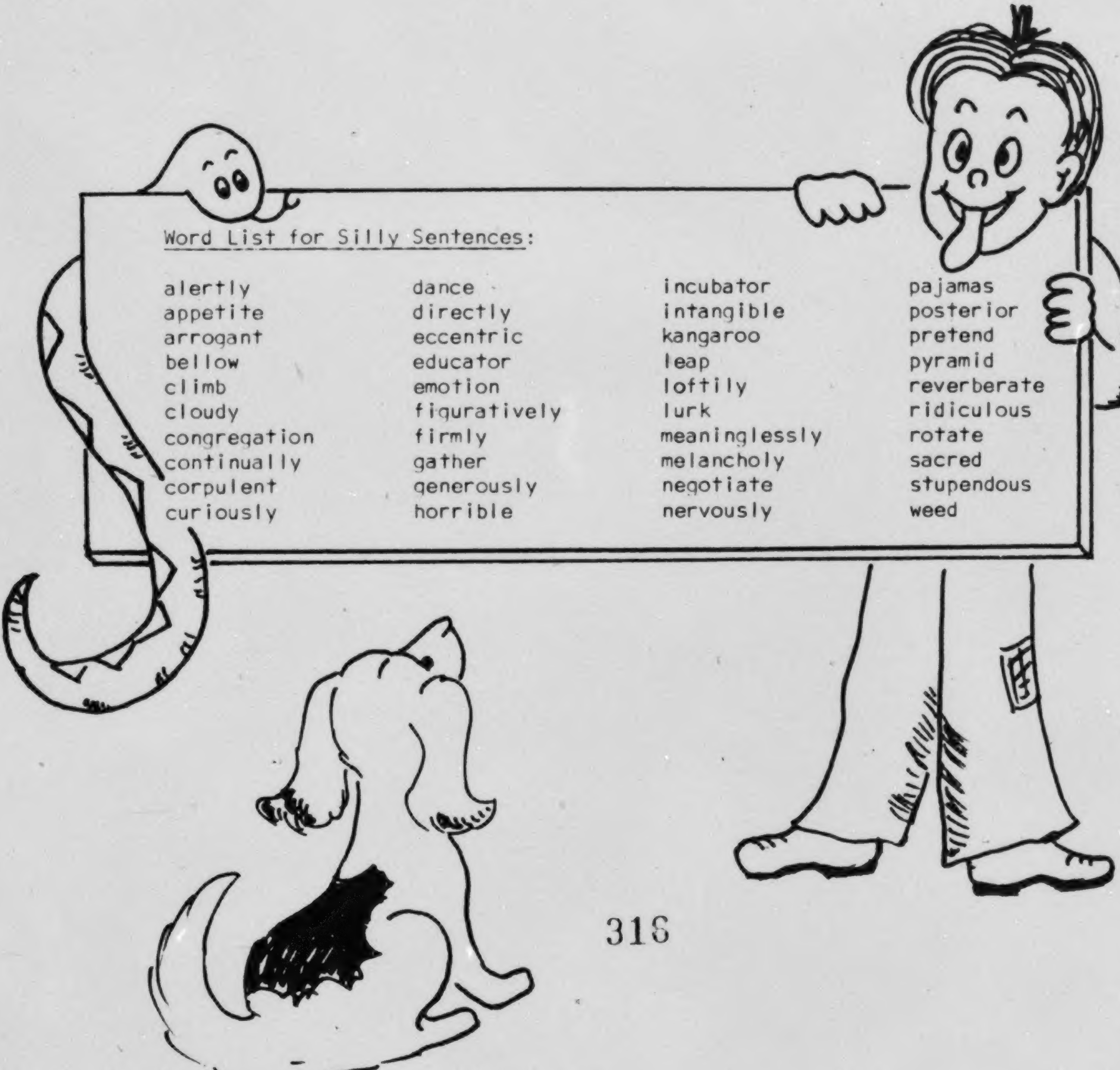
(Responses will vary.)

(Have a different series of words suggested that will fill in these same "slots." Repeat the process until students realize that the grammatical pattern remains identical although different words are substituted.)	suggests alternate series of words	demonstrate that	when a different series of words is slotted into the same grammatical pattern, the pattern remains identical.
2. (To reinforce and apply what was taught in the first activity, have various students suggest alternate grammatical patterns, and have other students supply different series of words to "plug in" to them.)	suggests alternate grammatical patterns	demonstrate that	a variety of different sentence patterns are possible.
3. (Give the students duplicated lists of the 40 alphabetized words shown on the next page. Explain that this list can be broken down into four separate lists (10 words each) of Adjectives, Nouns, Verbs, and Adverbs.	listens and examines word lists	determine that	the list of 40 words can be broken down into four separate lists (10 words each) of adjectives, nouns, verbs, and adverbs.

Silly Sentences

Have the students fold sheets of writing paper in halves twice, vertically, to produce four columns. Have them label the columns, as shown on the previous page, with the names of four underlined parts of speech.	folds paper and labels columns	provide	four columns, with the headings: Adjectives, Nouns, Verbs, and Adverbs.
Have the students go through the list, separating out words of the four different parts of speech and listing them in their respective columns.	sorts words alphabetically	demonstrate	the ability to classify words into groups according to their parts of speech.
There are four rules to follow: (1) Begin each adjective with a capital letter. (2) Add -s to each noun.	changes the forms of nouns and verbs	assure that	grammatical sentences are produced.
(3) Add -ed to each verb. (4) Put a period after each adverb. (All regular adverbs end in -ly.)	begins sentences with capitals and ends them with periods	assure that	correctly marked sentences are produced.
When we finish, what will we have? SILLY SENTENCES!)	listens	determine that	this activity will produce Silly Sentences--four-word sentences grammatically correct in form but nonsensical and funny in content.

ECTIVE
NOUN
VERB
ADVERB



Word List for Silly Sentences:

- alertly
- appetite
- arrogant
- bellow
- climb
- cloudy
- congregation
- continually
- corpulent
- curiously
- dance
- directly
- eccentric
- educator
- emotion
- figuratively
- firmly
- gather
- generously
- horrible
- incubator
- intangible
- kangaroo
- leap
- loftily
- lurk
- meaninglessly
- melancholy
- negotiate
- nervously
- pajamas
- posterior
- pretend
- pyramid
- reverberate
- ridiculous
- rotate
- sacred
- stupendous
- weed

Silly Sentences

(If the students sort the words out correctly in alphabetical order, they will all have the same Silly Sentences. But any grammatically correct adjective-noun-verb-adverb sequence is acceptable.	investigates different combinations of words	discover that	any combination of words--in the correct forms and the correct adjective-noun-verb-adverb sequence--will produce a grammatically correct Silly Sentence.
4. Have students select some fancy vocabulary with which to create their own Silly Sentences. Some of the more ingeniously ridiculous may be illustrated with appropriate caricatures and displayed on the classroom wall.	selects fancy vocabulary	create and illustrate his/her own	original Silly Sentences.

EVALUATION:

5. (Lead students to express their reactions to the lesson. Ask them to describe their former feelings toward grammar. Have their attitudes changed since the lesson? How? Discuss.)	listens, responds, discusses	evaluate his/her	feelings and attitudes toward "grammar" before and after the lesson on Silly Sentences.

Given instruction in how to produce Silly Sentences--basic adjective-noun-verb-adverb sequences--the student will demonstrate an awareness of the basic nature and function of grammar.

Lord & Lady

Developed by: Susan Sager

Concept/Competency

INSTRUCTION IN USING BASIC PROCESSES

The technique of close reading--using the basic processes of acquisition, translation, interpretation, and extrapolation--helps us to get at the meaning of difficult, but great, literature.

LEVEL 5 - 6 + TIME 3 45-min. periods

COGNITIVE: INTELLECTUAL EFFECTIVENESS

ENTRY CONCEPTS:

--Familiarity with Macbeth in story form
--Awareness of figurative language
--Previous experience in consciously using four basic thinking processes, separately, in short exercises

MATERIALS:

Duplicated copies of Macbeth's and Lady Macbeth's speeches;
Taped recordings of the speeches read by actors;
Annotated edition of the complete text of The Tragedy of Macbeth;
Stories from Shakespeare by Marchette Chute

TEACHER TASKS:	STUDENT		
	ENABLING BEHAVIORS:		LEARNINGS:
	The student:	*In order to:*	
INTRODUCTION:			
Say: "Many people consider Shakespeare very heavy going. They try to read one of his plays without adequate preparation, and they soon give up in discouragement. To make a comparison: If you're going to tackle Mount Everest, you've got to have the proper equipment--and some solid experience in climbing smaller mountains!	listens to an analogy	become aware that	tackling Shakespeare successfully requires the right skills and background experiences.
Today we're going to focus on a technique called close reading which uses four basic thinking processes: acquisition, translation, interpretation, and extrapolation."	listens and observes	obtain an overview of	a lesson on close reading utilizing the processes of: acquisition translation interpretation extrapolation.

Lord and Lady

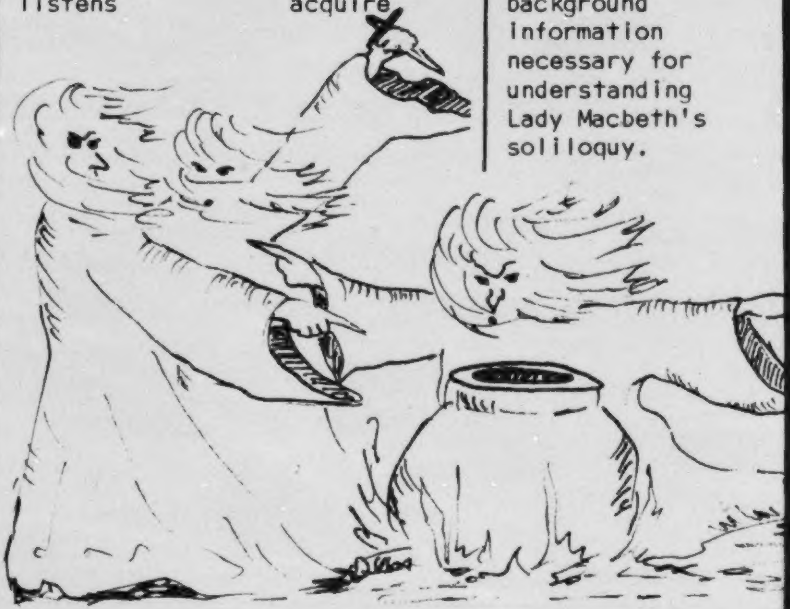
(Throughout the lesson, write the underlined words on the board for visual emphasis.)

"This technique will help you to understand printed material that you formerly thought was completely out of reach. Keep that image of Mount Everest in mind. Shapespeare is full of images. And an awareness of these comparisons he uses so vividly can greatly increase our understanding and enjoyment of his work."	listens	learn that	awareness of the images Shakespeare uses can increase our understanding and enjoyment of his work.

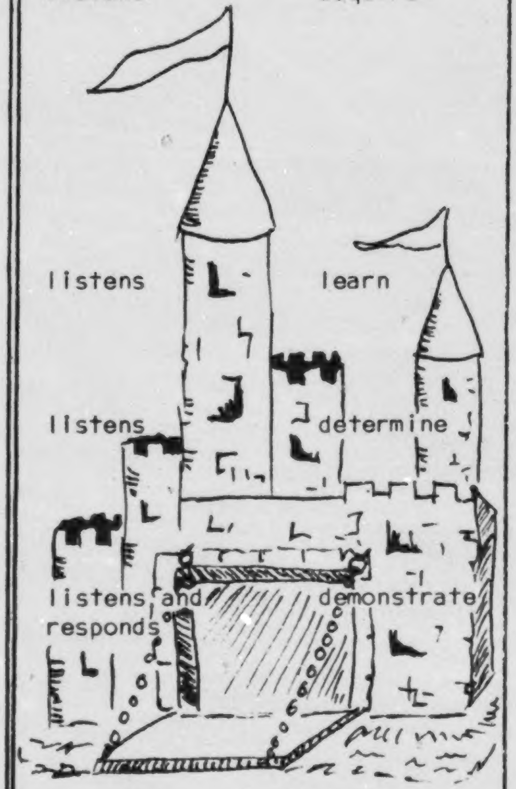
LESSON DEVELOPMENT:

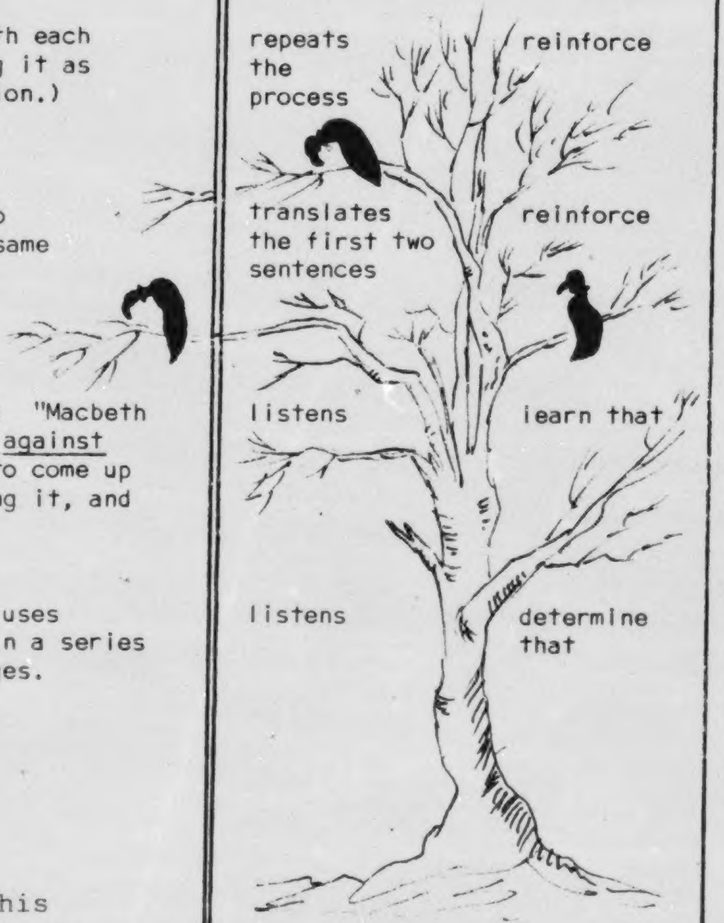
1. Say: "You are familiar with the story of Macbeth. Today we'll examine two speeches from this drama, one by Lady Macbeth and one by her lord.	listens	determine	procedures to be used for the first activity--acquistion (data level).
These particular speeches are not part of a dialogue between two or more characters in the play. They are called soliloquies, from the Latin elements -sol(i)- (alone) and -loqu- (speak). The character speaks while either entirely alone on the stage or while standing apart from the other characters.	listens and observes	acquire knowledge of	the meaning of the terms: dialogue soliloquy interior monologue invocation debate.
The soliloquy is an interior monologue, representing what is going on in the person's mind. It may take the form of an invocation--from in- plus -voc- (call) --in which the character calls on someone or something to enlist their aid. Or it may take the form of a debate, in which the character considers the points for and against a particular course of action.			

First, Lady Macbeth. She has just received a letter from her husband. It tells of his strange meeting with three witches, who promised that he would be king of Scotland. Her mind leaps, as his has done, to the golden crown that lies waiting...and to the final step that lies between them and the throne: disposal of the current occupant.	listens	acquire	background information necessary for understanding Lady Macbeth's soliloquy.
After a messenger arrives with the news that King Duncan is to visit Macbeth's castle that very night, Lady Macbeth, in a magnificent, blood-chilling speech, calls on the powers of darkness to harden her heart and help her to be cruel."			
(Distribute copies of Lady Macbeth's speech.)			
"Follow Lady Macbeth's speech as I play a recording of it. You may not understand every word--but you cannot help sensing an atmosphere of appalling evil."	listens and reads	become familiar with	Lady Macbeth's soliloquy on tape and in print.
(Play a tape of Lady Macbeth's speech. Afterwards, allow students to comment on it.)	responds and discusses	increase his/her	familiarity with the speech.
"Now, Macbeth. After his arrival home, his wife hints at the opportunity that has come within their very walls, but Macbeth shrinks from the idea of murder. Later, restless and agitated, he leaves the banquet hall where the king is being entertained, and struggles with himself and with the thought of assassination."	listens	acquire	background information necessary for understanding Macbeth's soliloquy.



(Distribute copies of Macbeth's speech.)			
"Again, although you will not understand every word, you will sense Macbeth's agony of uncertainty and the revulsion he feels."	listens and reads	become familiar with	Macbeth's soliloquy on tape and in print.
(Play a tape of Macbeth's speech. Afterwards, allow students to express their reactions to it.)	responds and discusses	increase his/her	familiarity with the speech.
2. Say: "Shakespeare wrote poetry--and poetry communicates to us mostly through our feelings. It is often difficult or impossible to assign a literal meaning to a passage of poetry, and usually unnecessary as well. But when the poetry is part of a drama that tells a story, it is useful to know how to determine its literal meaning.	listens	acquire	background for the second activity--translation (concept level).
Putting a communication into a parallel form--for example, changing it from figurative language into a statement of literal meaning--is called translation.	listens	learn	the definition of the process of translation.
Today we will translate each sentence of our lord's and lady's soliloquies, to see if we can get at their literal meaning.	listens	determine	procedures to be used during the activity.
First, Lady Macbeth."			
(Read the first sentence to the students. Then reread it, clause by clause, and have the students paraphrase it orally in everyday, literal language):	listens and responds	demonstrate	the ability to paraphrase a sentence from Shakespeare in everyday, literal language.





Come, you spirits That tend on mortal thoughts,/ unsex me here,/ And fill me from the crown to the toe, topfull Of direst cruelty!	(Responses will vary:) Come, you spirits That influence men's minds,/ take away my feminine gentleness and compassion,/ And fill me from head to toe With the most terrible cruelty!		
(Continue in the same way with each sentence in the speech, using it as an exercise in oral translation.)	repeats the process	reinforce	skill in translation.
"Now, Macbeth. Let's translate the first two sentences orally, using the same procedure we used with Lady Macbeth's speech."	translates the first two sentences	reinforce	the ability to translate Shakespeare's poetry into modern-day prose.
When this has been done, say: "Macbeth goes on to list five reasons against doing the deed. He is able to come up with only one reason for doing it, and that is an inadequate one.	listens	learn that	Macbeth presents five reasons against assassination and only one reason for it.
In this passage, Shakespeare uses figurative language heavily in a series of vivid and extravagant images.	listens	determine that	this passage consists of reasons for and against assassination imbedded in a complex background of figurative language

NOTE:

Page 255 follows this one; then page 249, etc.

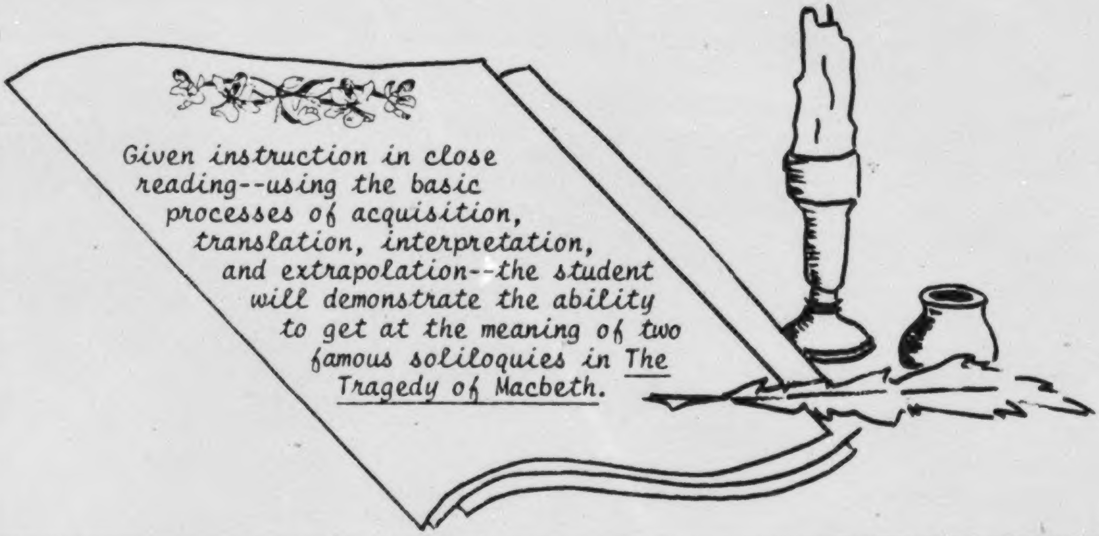
3. Say: "You have done a good job of translating these speeches of Lady Macbeth and Macbeth.			
Now, we will reexamine both speeches in their entirety. We will see how the parts of each speech relate to the speech as a whole; and how the two speeches relate to each other. This process is called interpretation.	listens	determine	procedures to be used during the third activity--interpretation (generalization level).
First, Lady Macbeth. What does her entire concern seem to be, as expressed in this speech? How does each part of the speech support your conclusion?" (Discuss.)	listens, responds, discusses	clarify his/her	understanding of Lady Macbeth's character and motivation.
"Now, Macbeth. What does Macbeth's major concern seem to be? How does it differ from his wife's? How does each part of the speech support your conclusion?" (Discuss.)	listens, responds, discusses	clarify his/her	understanding of Macbeth's character and motivation.
"Compare Lady Macbeth's character with that of her husband. Who seems to be the most hard hearted? Which character is the most complex? What do the speeches reveal about the personality of each?" (Discuss.)	compares Lady Macbeth and Macbeth	demonstrate	ability to distinguish important differences in character between Macbeth and Lady Macbeth.

4. Say: "Now let's go beyond what we can learn from directly examining these two speeches, and speculate on what might happen to Lady Macbeth and Macbeth as they embark on their bloody course of action. Projecting into the future and imagining what might happen is called extrapolation.	listens and observes	determine	procedures to be used during the fourth activity--extrapolation (implication level)
The tendency established in Lady Macbeth's character is her concern with the practical problems of how the job is to be done. The tendency established in Macbeth's character is his concern with the moral implications of the act.	listens and observes	summarize	important basic tendencies in the characters of Lady Macbeth and Macbeth
Will the established tendencies continue and become ever more apparent? Or is there a possibility that each character might be changed by the action and take on quite different tendencies?	listens and responds	speculate	whether the established tendencies will continue or whether they will be changed by the actions engaged in.
Will Lady Macbeth continue to be practical and hard hearted? Or will she become haunted by moral considerations?" (Discuss.)	listens, responds, and discusses	judge	whether or not Lady Macbeth will change.

"Will Macbeth continue to be plagued by a guilty conscience? Or will he become concerned with the practical problems of how to carry out acts and conceal guilt, growing ever more cruel and hard hearted?" (Discuss.)	listens, responds, and discusses	judge	whether or not Macbeth will change.
"Supposing that there is such a *role reversal* as this in the characters of the lady and her lord, at what point will it start to take place?" (Allow the students to speculate, but leave the discussion open ended. Their knowledge of *Macbeth* is limited, and the purpose here is to give them conscious experience with the process of extrapolation, not to reach any definite conclusion.)	supposes	speculate	at what point a role reversal might take place.
EVALUATION:			
(The students may evaluate the accuracy of their close reading in a number of ways. Those who wish to pursue the matter of character development may want to read the play, complete or in part.)	reads the play	evaluate	the degree of accuracy achieved during the close reading of passages from the play.
Ideally, this lesson should be given in conjunction with the opportunity to attend a live production of the play; view a screening of the 1948 Orson Welles film; or to watch the PBS Humanities in Drama version, first telecast in 1975 and since repeated. In this case, ask the students to watch the development of both characters and be on the lookout for any significant turning points.	attends a live production, screening, or telecast of *Macbeth*	acquire and enrich	his/her understanding of the entire drama.

Lord and Lady

A passage in III.ii. 1-56 reveals such a turning point. Macbeth has just plotted the deaths of Banquo and Fleance, but has not yet openly revealed his plan to his wife.	closely watches a key scene	consider	how action modifies character.
Sensing something, she uneasily asks, "What's to be done?" He cynically replies, "Be innocent of the knowledge, dearest chuck, till thou applaud the deed."	listens to key dialogue	judge	how dialogue reveals character.
In the television drama, the camera moves in for a closeup of Lady Macbeth's face: dawning comprehension of her husband's intention is followed by an expression of growing horror and dread.)	observes body language	appreciate	how non-verbal communication underscores dialogue and adds another dimension of meaning.



Given instruction in close reading--using the basic processes of acquisition, translation, interpretation, and extrapolation--the student will demonstrate the ability to get at the meaning of two famous soliloquies in The Tragedy of Macbeth.

41 Come, you spirits
42 That tend on mortal thoughts, unsex me here,
43 And fill me, from the crown to the toe, topfull
44 of direst cruelty! Make thick my blood,
45 Stop up the access and passage to remorse,
46 That no compunctious visitings of nature
47 Shake my fell purpose, nor keep peace between
48 The effect and it! Come to my woman's breasts,
49 And take my milk for gall, you murdering ministers,
50 Wherever in your sightless substances
51 You wait on nature's mischief! Come, thick night,
52 And pall thee in the dunnest smoke of Hell,
53 That my keen knife see not the wound it makes,
54 Nor Heaven peep through the blanket of the dark
55 To cry "Hold, hold!"

-*The Tragedy of Macbeth*
I. v. 41-55.

GLOSSARY:

45 remorse - pity
46 compunctious... nature - natural feelings of pity
46 compunctious - remorseful
48 The ... it - that is, between pity and the effecting of my dreadful purpose
49 murdering ministers - spirits of murder
50 sightless - unseen (invisible)
52 pall-cover, as with a pall
52 dunnest - darkest
54 Nor ... dark - nor Heaven peer through the darkness which covers, as with a blanket

MACBETH

1 If it were done when 'tis done, then 'twere well
2 It were done quickly. If the assassination
3 Could trammel up the consequence, and catch,
4 With his surcease, success, that but this blow
5 Might be the be-all and the end-all here,
6 But here, upon this bank and shoal of time,
7 We'd jump the life to come. But in these cases
8 We still have judgment here, that we but teach
9 Bloody instructions, which being taught return
10 To plague the inventor. This even-handed justice
11 Commends the ingredients of our poisoned chalice
12 To our own lips. He's here in double trust.
13 First, as I am his kinsman and his subject,
14 Strong both against the deed. Then, as his host,
15 Who should against his murderer shut the door,
16 Not bear the knife myself. Besides, this Duncan
17 Hath borne his faculties so meek, hath been
18 So clear in his great office, that his virtues
19 Will plead like angels trumpet-tongued against
20 The deep damnation of his taking off.
21 And pity, like a naked newborn babe,
22 Striding the blast, or Heaven's cherubin horsed
23 Upon the sightless couriers of the air,
24 Shall blow the horrid deed in every eye,
25 That tears shall drown the wind. I have no spur
26 To prick the sides of my intent, but only
27 Vaulting ambition, which o'erleaps itself
28 and falls on the other.

- *The Tragedy of Macbeth*
I. vii. 1 - 28.

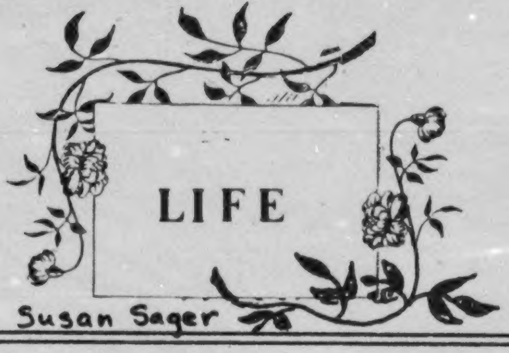
GLOSSARY:

2-4 If... success- If only murder could have no aftereffects but be final and successful at Duncan's death (surcease)
3 trammel - to entangle in a net
6 But - even
7 jump - risk
11 chalice - cup
17 faculties - powers
18 clear - innocent
21 naked ... babe - an object which moves the hardest-hearted to pity
23 sightless couriers - unseen messengers
28 other - other side

See if you can hack your way through this jungle undergrowth or metaphor, and list the reasons in plain, unadorned language.	lists reasons (Responses will vary.)	demonstrate	the ability to separate main ideas from the decorative details surrounding them.

Contra:	Against
(Lines 6 - 7)	1. To gain a temporary advantage in this life, we would commit a sin that would damn our souls for all eternity.
(Lines 7 - 12)	2. When we do evil to others, they retaliate by doing evil to us in return.
(Lines 12 - 14)	3. A king's relatives and subjects should be loyal to him.
(Lines 14 - 16)	4. A host should do everything he can to promote the safety of his guests.
(Lines 16 - 25)	5. The well-beloved Duncan has used his power so wisely and been such a good man as king that a tremendous burst of outrage would result if he were murdered.

Pro:	For:
(Lines 25 - 28)	1. I have only ambition to motivate me, and ambition can reach too high, leading to a fall.



Susan Sager

Concept/Competency

INSTRUCTION IN USING BASIC PROCESSES

The higher-level thinking processes--application, analysis, synthesis, and evaluation--can help us to illuminate the deeper meaning and significance of great works of literature.

LEVEL 5 - 6 + TIME 3 45-min. periods

INTELLECTUAL EFFECTIVENESS

ENTRY CONCEPTS:
--Satisfactory completion of the companion lesson, "Lord and Lady"
--Experience in consciously using the higher-level thinking processes in appropriate exercises

MATERIALS:
Duplicated copies of Macbeth's soliloquy;
Taped recording of an actor's interpretation of the speech;
Chalkboard, chalk, writing paper, pencils;
Background materials on Macbeth for the teacher

TEACHER TASKS:
(NOTE: An effort has been made to include some of the concepts that have been stressed in group process--thus using humanities to help bridge and integrate affective and cognitive.)

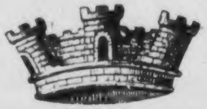
COGNITIVE:

	STUDENT		
	ENABLING BEHAVIORS:		*LEARNINGS:*
	The student:	*In order to:*	
INTRODUCTION:			
Say: "We first met Macbeth and Lady Macbeth early in the drama, at the point where they were making certain decisions.	listens	recall and review	an earlier lesson dealing with Macbeth.
We developed close reading skills utilizing the basic thinking processes: acquisition, of knowledge, translation, interpretation and extrapolation.	listens	recall	the names of the basic thinking processes--acquisition, translation, interpretation and extrapolation.

Life

These processes enabled us to get at the basic meaning of two speeches by Macbeth and Lady Macbeth in which one mentally debated the advisability of killing King Duncan while the other invoked supernatural aid to help accomplish the act.	listens	remember that	the basic thinking processes can help us to get at the basic meaning of materials we are close reading.
Today we will use the higher-level thinking processes--application, analysis, synthesis, and evaluation--in dealing with a speech near the end of the drama."	listens	determine that	the higher level thinking processes-application, analysis, synthesis and evaluation--will be stressed i this lesson.

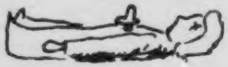
(NOTE: It is assumed that during the course of the lesson, the teacher will clarify the meaning of any underlined terms or other terms and statements that may present obstacles for the students.)



LESSON DEVELOPMENT:

1. Say: "I will summarize the action of the plot up to the point where Macbeth delivers the speech that we are going to examine. Each time I tell of a killing, see if you can identify the motive for the killing in just one or two words.	listens	learn that he/she will hear	an outline of the plot with a catalogue of the killings that have taken place.
	responds	identify	the motive for each killing.
Macbeth has killed King Duncan, but the killing hasn't stopped there. He has also killed the king's two guards (on whom he blamed the king's murder) in pretended outrage at their 'evil deed.' The king's sons flee, rightly fearing for their lives, and Macbeth, next in line to the throne, is crowned king.	(ambition)		King Duncan
	(concealment)		the two guards

LIFE

Yet, even having attained his goal, Macbeth does not rest secure. He is disturbed by Banquo's probable suspicions and by the witches' prediction that Banquo's descendents will be kings, while none of his own will inherit the crown. So he hires murderers to assassinate Banquo and his son, Fleance. Banquo is killed, but Fleance escapes.	(fear, jealousy) 	Banquo
Macbeth consults the three witches again, who produce three apparitions that (1) tell him to beware Macduff, another nobleman; (2) assure him that he will never be harmed by anyone born of a woman; and (3) claim that he will not be conquered until Birnam Wood comes to Dunsinane Hill, the seat of his castle.		
Macbeth decides that Macduff, too, must be killed--but learns that Macduff has gone to England to seek help from the dead king's elder son. In retaliation, Macbeth has Macduff's wife and children killed, and goes out to gather an army to resist the coming onslaught by his enemies.	(revenge, rage)	Macduff's wife and children
Meanwhile, Lady Macbeth is endlessly reliving all the killings in her mind. She restlessly walks and talks in her sleep, and finally she kills herself.	(remorse, despair)	Lady Macbeth--suicide.
When Macbeth is brought word of her death, the futility of all their plotting, all the killing, even, seemingly, of human life itself, comes home to him.	listens become aware of	the emotional atmosphere of the moment in which Macbeth speaks his soliloquy.

This, then, is where matters stand when Macbeth speaks one of the most famous soliloquies in all of dramatic literature."			
(Distribute copies of the speech. As students follow on their copies, play a taped recording of an actor's interpretation of the speech.)	listens and reads	become acquainted with	Macbeth's soliloquy.

Macbeth.

Tomorrow, and tomorrow, and tomorrow
Creeps in this petty pace from day to day,
To the last syllable of recorded time;
And all our yesterdays have lighted fools
The way to dusty death. Out, out, brief candle!
Life's but a walking shadow, a poor player
That struts and frets his hour upon the stage
And then is heard no more. It is a tale
Told by an idiot, full of sound and fury,
Signifying nothing.
-V.v. 19-28.

(Allow the students to express their reactions to the speech.)	responds and discusses	share	reactions to Macbeth's soliloquy.
2. Say: "At the application level of thinking, we apply previously learned skills to new materials.	listens	review	a definition of the application level of thinking.

There is an interesting paradox about this speech: Although it is considerably shorter and simpler in form than the two previous speeches, and contains no unfamiliar words, it is much more difficult to translate literally, and therefore, to interpret and extrapolate from. Do you have any ideas about why this might be so?" (Discuss.)	listens and discusses	become aware that	this speech, while apparently simpler in form and vocabulary, is actually more difficult (in concept) than the two speeches previously studied.
"Is this soliloquy an invocation, a debate, or something else? What might we call it?	examines the speech (meditation, elegy, etc.)	determine	the literary form of the speech.
What is Macbeth really saying here? Is his basic view of life optimistic or pessimistic? How do you know?" (Discuss.)	discusses the speech	exercise and test	comprehension skills previously learned.
Say: "At the analysis level of thinking, we analyze something by taking it apart and finding out what the parts are like and how they work together to form the whole.	listens	review	a definition of the analysis level of thinking.
Examine the soliloquy again. What are the parts of Macbeth's speech? How do you determine this? What images is Shakespeare using here? All of these images are metaphors for what single process? Why do you think Shakespeare chose to use these particular metaphors?" (Discuss.)	examines and discusses the speech (Responses will vary. Accept any for which a reasonable explanation is given.)	isolate	the separate parts of the speech; criteria for determining what they are; the images used; the process for which the images are metaphors; the reason these particular metaphors were chosen.

LIFE

"Are there any paradoxes--images or ideas that seem to be opposite or contradictory to each other? What transitions does Shakespeare use from one part of the speech to the next? What dominant impression does the entire speech give?" (Discuss.)	probes further	discover	possible paradoxes; transitions from one part to another; the over-all impression conveyed by the speech.
Say: "At the synthesis level of thinking, we do imaginative, original thinking, and put together something new.	listens	review	a definition of the synthesis level of thinking.
Everyone, consciously or unconsciously, has a basic world view or fundamental personal philosophy that determines how he/she sees life and responds to it. This view can be changed by the decisions he/she makes.	listens	become acquainted with the idea that	everyone has a basic world view: 1) that determines how he/she sees and responds to life; and 2) that can be changed by the decisions the individual makes.
What is your world view? What metaphors might you use to represent your ideas about life?" (Discuss.)	reflects and discusses	become aware of	his/her own personal view of life; appropriate metaphors that might symbolize this view.
"Take a particular stance on life. It can be your true view or it can be an assumed view that is quite different from your own.	listens	determine	the procedures to be used during the synthesis activity
Compose a short essay or meditation in poetic form. Select and develop metaphors that are suitable for your chosen view."	composes a poem	create	a poetic statement about life.

(When students have completed their compositions, encourage them to share them with their classmates. Have the students look for, and recognize, unusual, striking images and particularly successful syntheses of ideas that produce a strong emotional impact.)	mutually shares his/her composition	recognize and appreciate	unusual, striking images and successful syntheses of ideas.
EVALUATION:			
5. Say: "At the evaluation level of thinking, we first set up appropriate standards or values. Then we determine how closely an object, activity, situation, or idea meets these standards or values.	listens	review	a definition of the evaluation level of thinking.
Values differ from facts in that facts can be determined to be true or false but values cannot. Then how do we determine what is good or bad? desirable or undesirable? morally right or wrong?" (Discuss.)	listens and discusses	distinguish	the difference between facts and values.
	discusses	consider	criteria we use to determine what is good, bad, etc.
"The decisions we make are based on our personal standards, values, and priorities. What do the decisions made by Macbeth and Lady Macbeth indicate about their system of values?" (Discuss.)	considers and discusses (Responses will vary.)	conclude that	a person's system of values can be inferred from the decisions he/she makes.

"The decisions they made resulted in acts which set in motion a chain of events leading inevitably to the destruction of both conspirators. What does this indicate about Shakespeare's system of values?" (Discuss.)	considers and discusses (Responses will vary.)	conclude that	an artist's system of values can be determined by examining the basic themes in his/her work.
"This is the traditional theme of tragic drama, first developed by the Ancient Greeks: Once that fatal first step is taken, all the rest follows. There is no turning back. This is an essential characteristic of tragic drama.	listens	become aware that	an essential characteristic of tragic drama is that the fatal first step sets in motion a chain of events leading inevitably to a final catastrophe.
What is essential in drama is not necessarily essential in real life. When you make what later proves to be a 'wrong' decision, can you sometimes alter your course or reverse the chain of events proceeding from your decision? How?	weighs ideas	conclude that	In a completed work of literature, events follow an order that remains forever fixed; while in real life, we have the opportunity to "rewrite" the script."
Give an example from your own experience." (Discuss and sum up.)	considers personal experience	appreciate that he/she has	the power to re-evaluate the situation and make new decisions when previous decisions have produced unsatisfactory results.

Given careful guidance in the use of application, analysis, synthesis, and evaluation processes in dealing with Macbeth's great soliloquy, the student will demonstrate the ability to get at the deeper meaning and significance of the speech and to relate these discoveries to his/her own world view and life experiences.

HYPOTHESIZING

Developed by: Susan Sager

Concept/Competency

BASIC PROCESSES - GENERAL REASONING

After much investigation and experimentation, a plausible hypothesis about a natural phenomenon may become a theory. If there is enough indisputable evidence to support it, a sound theory may become a law. This is how the sum of knowledge advances.

LEVEL 5 - 6 TIME 1 hour

INTELLECTUAL EFFECTIVENESS

ENTRY CONCEPTS:
Hypotheses are the tentative answers we formulate to questions we ask about phenomena observed in the world around us.

MATERIALS:
Source book of science questions and answers for the teacher;
Chalkboard, chalk;
Paper, pencils.

COGNITIVE:

TEACHER TASKS:	STUDENT ENABLING BEHAVIORS: The student:	 In order to:	 LEARNINGS:
INTRODUCTION: Write the following question structurers on the chalkboard: Why is(n't)/are(n't) _________? Why does(n't)/do(n't) _________? What (would happen) if___________? Point out that all investigations leading to new knowledge start with questions beginning like these. Students have been asking such questions themselves almost since they could first talk.	listens and observes	review	the structuring of questions that lead to the development of hypotheses.

Ask the students: "What do we call the tentative (trial) answer to such a question?" (unspoken hypothesis) Ask why such an answer is tentative. (experimental, provisional)	recalls	demonstrate (a hypothesis is subject to revision as soon as further information comes in.)	knowledge of the term hypothesis and its meaning.
LESSON DEVELOPMENT:			
1. Post a chart with the following terms and their definitions. Read and discuss them, asking the students to give any examples of each that they know of.	listens and observes	identify and recall	the formal definitions for the terms hypothesis, theory and law, and examples of each.
Hypothesis - A tentatively inferred explanation of the operation of certain phenomena with, as yet, inadequate evidence to support it; usually, a basis for further experimentation	EXAMPLES: (Nebular hypothesis)		
Theory - A formulated general principle explaining the operation of certain phenomena with considerable evidence to support it	(Theory of evolution)		
Law - An exact formulation of the principle operating in a sequence of events in nature observed to occur with unvarying uniformity under the same conditions	(Law of the conservation of energy)		
Clarify and differentiate these terms with the students. Help them to note the progression from extreme tentativeness to relative certainty.	discusses	recognize that	as we go from hypothesis, through theory, to law, we progress from tentativeness to certainty.

(Suggest that students do research to find more scientific hypotheses, theories, and laws to add to our collection.)			
2. To give practice in applying knowledge of this process, invite students to formulate sample "Why--" and "What.... if--" questions. Ask other students to formulate the corresponding hypotheses. Record questions and hypotheses on the board.	utilizes his general information	devise	questions about natural phenomena and their corresponding hypotheses.
3. Tell the students that they will now play a game in which they will have the opportunity to analyze a question about a given phenomenon and come up with as many plausible hypotheses as possible to explain it. After putting the students into groups of three to six, explain that each group will get a slip of paper with the same question on it. They will be allowed five (5) minutes to think of as many hypotheses as possible to explain the question. The group is to select one person to record the answers.	listens	determine	the instructions for playing the hypothesizing game.
Give the students a question selected from a source book such as The Question and Answer Book of Everyday Science by Sonneborn (Random House, 1961).	analyzes the question	formulate	as many plausible hypotheses as possible that might explain a given phenomenon.

Examples:
Why is the water in the ocean salty?
Why doesn't an igloo melt inside?
Why do we walk in circles when we are lost?

At the end of the first timed five (5) minute period, give the group with the most answers twenty-five (25) points. In case of ties, each group will receive 25 points. No duplications are allowed; i.e., the same answer cannot be reworded.

4. Give each group five or six minutes to review their hypotheses in order to add to the list.	reviews hypotheses	add	as many more different hypotheses as possible.
At the end of the second timed period, add ten (10) points to the score of the group with the most answers.			

EVALUATION:

5. Redefine the task. Ask each group to pick from their list the hypothesis they think most likely approximates the answer. Allot 10 to 12 minutes for this portion of the lesson. Each group will have to decide, as a group, what their answer will be.	evaluates hypotheses	choose	the hypothesis that best explains the phenomenon.
Allow each group to read its final answer.	announces	share	his group's best answer.
Allow other groups to challenge or ask for clarification.	challenges other groups	require	clarification or defense of chosen hypotheses.

Give each group the opportunity to discuss the hypotheses presented and choose the one they think the most plausible. The recorder writes down the group's choice.	re evaluates hypotheses	choose	the hypothesis that even better explains the phenomenon.
Read the correct answer or allow the groups to do research to find the correct answer.	listens or does research	determine	the scientific explanation of the phenomenon.
Award the group(s) that chose the hypotheses that were most nearly correct 25 points.			
Give the group(s) with the correct response 40 points.			
Discuss the reasons for the correct answer.	listens and discusses	learn about	evidence supporting the correct answer.

100 points - Master of Logic
60 - 95 - Superb Thinker
35 - 55 - Good Thinker
15 - 30 - You're on your way!
0 - 10 - Back to the drawing board!

The Hypothesizing Game is adapted from the Memphis Handbook:

Patterson, Jo, Coordinator of CLUE. Why Doesn't an Igloo Melt Inside? A Handbook for Teachers of the Academically Gifted and Talented. Memphis, Tenn.: Memphis City Schools, 1973.

Given the opportunity to formulate and evaluate hypotheses which attempt to answer questions about given natural phenomena, the student will develop fluency in generating plausible hypotheses and skill in evaluating them.

MINI-MYSTERY

Developed by: Susan Sager

Concept/Competency

GENERAL REASONING

In some elimination logic problems, the given information consists of a set of statements, a certain number of which are known to be false--although these are not identified. Puzzles of this kind can be handled efficiently through the use of grids and the symbols T and F.

LEVEL 3 - 4 TIME 45 min.

COGNITIVE: INTELLECTUAL EFFECTIVENESS

ENTRY CONCEPTS: --Ability to use if...and then statements and record the results on grids.	MATERIALS: "HIP Puzzle" elimination logic problem--copy for each student; Chalk, chalkboard, pencils, scratch paper

TEACHER TASKS:	STUDENT ENABLING BEHAVIORS: The student:	In order to:	LEARNINGS:
INTRODUCTION: Say: "We have tackled and solved elimination logic problems in which we have matched persons with occupations, and so forth. We have found that using grids helps us keep track of the possibilities we eliminate until only the correct solution remains. Here is a different kind of "mini-mystery" for you to solve. See if you can determine how it is different and figure out an efficient strategy for solving it."	listens	recall	systematic problem solving.

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LESSON DEVELOPMENT:

1. Pass out a copy of the HIP Puzzle* to each student. Read it aloud to them with suitable emphasis and pauses.

Shorty Finelli was found shot to death one morning. With better than average luck, the police had three red-hot suspects behind bars by nightfall. That evening the men were questioned. They made the following statements:

Buck: 1) I didn't do it.
2) I never saw Joey before.
3) Sure, I knew Shorty.

Joey: 1) I didn't do it.
2) Buck and Tippy are both pals of mine.
3) Buck never killed anybody.

Tippy: 1) I didn't do it.
2) Buck lied when he said he'd never seen Joey before.
3) I don't know who did it.

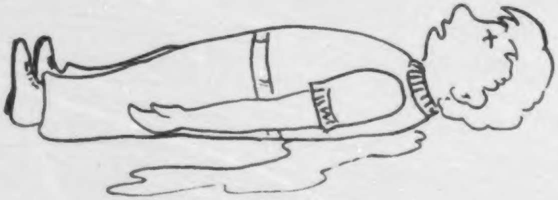
If one - and only one - of each man's statements is false, and if one of the three men is actually guilty, then who is the murderer?

(*From 101 Puzzles in Logic and Thought by C. R. Wylie, Jr. Used with permission by Dover Publications, Inc.

listens

determine

the elements of the problem.



2. "What kind of grid will we need on which to test the results of the given information?"

(If students need more guidance, ask: "How many suspects are there? How many statements did each suspect make? What symbols usually stand for true and false?")

organizes construct

	1	2	3
Buck			
Joey			
Tippy			

a suitable grid on which to record results.

3. "What condition is given, which, when met, will tell us we have achieved the correct solution?"

"How will we be able to determine which one of each suspect's three statements is false?"

analyzes discover

an appropriate strategy for determining which statements are false.

4. "At the outset, can you eliminate one of the three suspects as definitely innocent?

How did you draw this inference? Express it as a conditional (if...then) statement.

Write the tentatively correct symbols in the boxes of your grid opposite Tippy's name.

	1	2	3
Buck			
Joey			
Tippy	T		

hypothesizes infer

(Tippy is innocent.)

(If Tippy committed the crime, then his first and third statements are both false, contrary to the given condition.)

("I didn't do it." is true.)

which suspects can be eliminated.

Now...if Tippy is indeed innocent, what hypothesis must remain?

How will you test this hypothesis?"

(Elicit, by searching questions, a chain of conditional statements similar to the one shown at the right.)

	1	2	3
Buck	T	F	T
Joey	F	T	T
Tippy	T	T	F

(Either Buck or Joey is guilty.)

(If Buck is guilty, then Buck's first statement and Joey's third statement must be false.)

(But their second statements clearly contradict each other, so either Buck or Joey must be lying.)

(If Buck is lying, then he has made two false statements, contrary to the condition.)

(On the other hand, if Joey is guilty, then only his first statement must necessarily be false.)

(If Joey's second statement is true, then the condition can be met. Therefore, Joey is the murderer.)

EVALUATION:

5. "How can we judge the correctness of this solution?"

fills in grid

prove

the correctness of the problem's solution.

Given a set of statements, a certain number of which are known to be false, the student will be able to find a solution through the use of if...then statements and record the results on grids.

Concept/Competency

Deduction

Developed by: Susan Sager

DEDUCTION

In the deductive reasoning process, we begin with a generalization--or premise--assumed to be true, and work down to a particular statement--or conclusion--which must be true if the generalization is true.

LEVEL 5 - 6 + TIME *Several 30-45 min. per.*

COGNITIVE: INTELLECTUAL EFFECTIVENESS

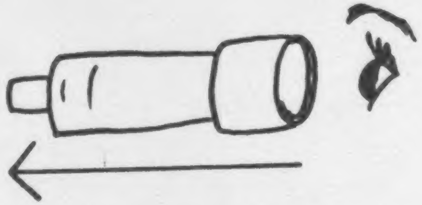
ENTRY CONCEPTS:

Different kinds of reasoning seem to go through different kinds of processes to arrive at their answers.

MATERIALS:

Chalkboard and chalk;
Writing paper and pencils;
Duplicated exercises for application & analysis;
Background material on deduction for the teacher

TEACHER TASKS:	*STUDENT* *ENABLING BEHAVIORS:* *The student:*	*In order to:*	*LEARNINGS:*
INTRODUCTION: Say and explain: "The deductive method of reasoning is the one primarily used in the mathematical approach to knowledge.	listens	learn that	deductive reasoning--or logic--is mathematical in approach.
When we are using deduction, we begin with a generalization--a general statement assumed to be true--and we work down to a particular statement which must be true if the general one is true. This particular statement is called the conclusion."	listens	become aware of	the basic process used in deduction.



LESSON DEVELOPMENT:

1. Say, "Here's an example. You start with the generalization--or first premise--that...
   All grasshoppers have six legs. Then you take a hypothetical grasshopper named Gus. (You don't have to go out and catch an actual grasshopper, because you are working in the realm of abstract logic.) Your second premise: Gus is a grasshopper. Your conclusion: Therefore, Gus has six legs."

   Generalization - First Premise:
   All grasshoppers have 6 legs.

   Second Premise:
   Gus is a grasshopper.

   Conclusion -
   Therefore, Gus has 6 legs.

   (To be sure that the students understand the principle and basic process of deduction, have them supply the conclusions for deductions such as the following:

   First premise:
   All dragons breathe fire.

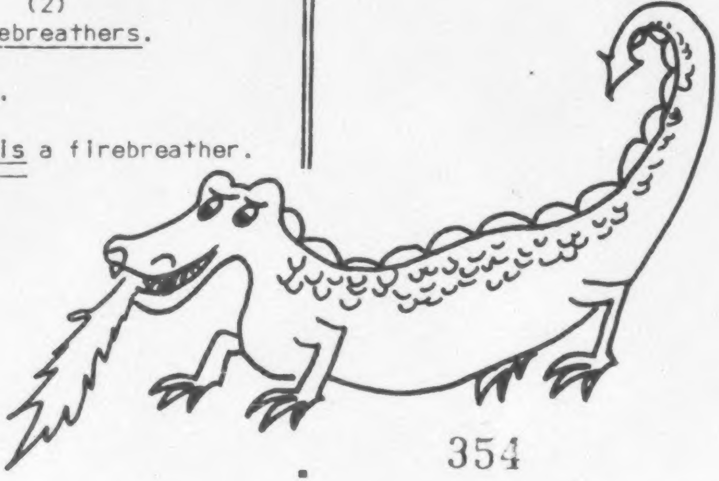
   Second premise:
   Herbert is a dragon.

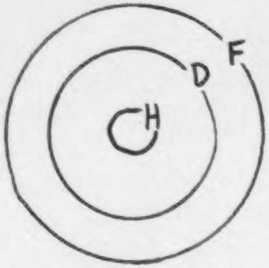
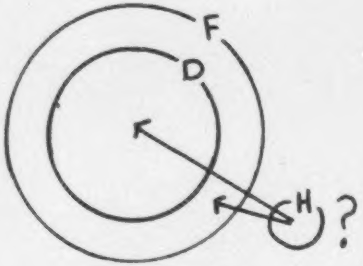
   Conclusion:
   Therefore, ______________________.

listens to a sample deduction	reinforce awareness of	the terminology and the process used in one kind of deduction.
listens and responds	become involved in	the first activity-building a base of knowledge and comprehension.
supplies conclusion of syllogism	demonstrate	ability to draw a valid conclusion when the first and second premise are given.

...Herbert breathes fire.

(Note: At this point, you may need to explain or review the difference between validity and truth. A syllogism may be valid, even if the conclusion is not true. However, if the premises are true in a properly constructed syllogism, the conclusion must also be true.)	listens and assesses	distinguish	the difference between validity and truth.
Say: "A syllogism--one kind of deductive reasoning--consists of two statements assumed to be true, from which a third statement follows inevitably if the first two are true.	listens	learn	the definition of a syllogism.
It is really a way of comparing statements about three sets so that a valid conclusion may be drawn.	responds	demonstrate	ability to identify the three sets compared in a syllogism.
What three sets are we dealing with in the example?	(1) Dragons (2) Firebreathers (3) Herbert		
Notice that we must reword our deduction so that the verb is always in a form of to be and the three sets are clearly designated." (1) (2) All dragons are firebreathers. (3) Herbert is a dragon. Therefore, Herbert is a firebreather.	listens and observes	learn that	in a true syllogism, (1) the verb used is always a form of to be; (2) the three sets are clearly designated.



(At this point, the students should be shown on the chalkboard how a syllogism can be checked for validity by drawing a circle for each of the three sets and seeing whether their relationship to one another is clear and unambiguous.)	listens, observes, and responds	learn that	a syllogism can be checked for validity by diagramming the relationship of the three sets by drawing circles.
All dragons are firebreathers. Herbert is a dragon. Therefore, Herbert is a firebreather.			(There is no question where Herbert's circle belongs. Therefore, this is a valid syllogism.)
All dragons are firebreathers. Herbert is a firebreather. Therefore, Herbert is a dragon.			(Since it is not clear where Herbert's circle belongs, no valid conclusion is possible.)
2. Say: "You will now have the opportunity to apply your new skills in deduction to a number of syllogisms or near-syllogisms. If a deduction is not in correct syllogistic form, reword it so that the verb is a form of to be and the three sets are clearly designated.	listens	determine	procedures to be used for the second activity--application.

Then check the validity of each syllogism by using circle diagrams. You will find that these circle diagrams will not always take the same form as the ones we have used so far. Notice key words such as all, only, no, some, etc."			
(Distribute duplicated application exercises. Have the students work in pairs to promote interaction, questioning, and discussion.)	applies skills to novel problems	demonstrate	ability to recast a deduction into correct syllogist form; ability to check validity of syllogisms throug the use of circle diagrams.
3. At a later session--after the students have gained proficiency in diagramming given syllogisms as a means of testing validity and in making up their own syllogisms to test--present them with an analysis exercise.			
Say: "Here are 10 situations for you to analyze. In each situation, try to determine the point of view expressed, and list as many as you can of the underlying assumptions that are implied."	listens, observes and discusses	determine	procedures to be used for the third activity--analysis.
(Demonstrate, using the first situation as an example. Discuss.)			

"Then, construct at least two syllogisms out of each situation, both valid (but not necessarily having true conclusions.)			
Try for contradiction--opposite conclusions in the two syllogisms. Or try for sequence--the conclusion of one syllogism becoming a premise of the next syllogism."	listens	learn	definitions for the terms contradiction and sequence.
(Again, demonstrate and discuss. Distribute duplicated analysis exercises, and have the students work in pairs, as during the application exercise.)	completes exercises	demonstrate	ability to analyze statements for point of view and the underlying assumptions implied; ability to construct syllogisms based on these assumptions.
4. Present the following idea for use in creative writing: "Test your skill in logic or imitation logic by composing an essay in support of a proposition that is almost certain to be disagreed with--at first. Use any means, fair or foul, to convince your audience of the 'truth' of your proposition, wherever possible, using logical processes or those that appear to be logical."	listens, observes, and discusses	determine	procedures to be used for the fourth activity--synthesis.
(Write the following propositions on the board as suggested possibilities. Discuss.)	composes an essay supporting an erroneous proposition	demonstrate	skill in using logic or imitation logic to persuade an audience.

Deduction

(1) The moon is made of green cheese.

(2) Automobiles are not just machines, but have minds of their own and are engaged in a conspiracy to take over the world.

(3) The earth is the center of the Universe.

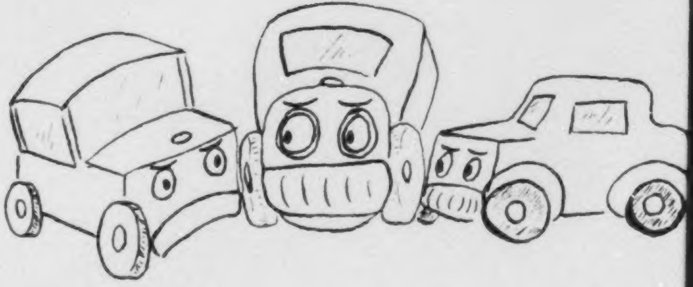
(4) All matter is composed of four elements: fire, air, earth, and water.

(5) Nuclear fallout is beneficial to human health.

EVALUATION:

5. Have class members evaluate the essays for
   a. their persuasiveness, whether logically sound or unsound;
   b. the soundness of their logic, whether persuasive or not.

Adapted from L. M. Myers, GUIDE TO AMERICAN ENGLISH, 4th Edition, © 1968, p. 255, and Monroe C. Beardsley, THINKING STRAIGHT, ©1966. Reproduced by permission of Prentice-Hall, Inc., Englewood Cliffs, N.J.



evaluates compositions	judge	effectiveness of essays in terms of a. persuasiveness b. soundness of logic.

Given instruction in deductive reasoning, th student will demonstrate awareness that we begin with a generalization assumed to be true and work down to a particular statement which must be true if the generalization is true.

1. All babies have tails.
   All dogs are babies.
   Therefore, all dogs have tails.

2. All B are C.
   All A are B.
   Therefore, all A are C.

3. All children love candy.
   Seymour loves candy.
   Therefore, Seymour is a child.

4. Only young persons use skateboards.
   Fred uses a skateboard.
   Therefore, Fred is a young person.

5. No marines are cowards.
   Dave is a marine.
   Therefore, Dave is not a coward.

6. Some of his friends are sailors.
   All of his friends are clever people.
   Therefore, some sailors are clever people.

7. All girls are good cooks.
   Pat is a good cook.
   Therefore, Pat is a girl.

8. All girls are good cooks.
   Pat is a girl.
   Therefore, Pat is a good cook.

9. Only Communists read Marx.
   Jones reads Marx.
   Therefore, Jones is a Communist.

10. Some surfers are bachelors.
    No bachelors are people without pride.
    Therefore, some people without pride are not surfers.

Sources:

Beardsley, Monroe C. Thinking Straight, 3rd ed. (Englewood Cliffs, N. J.: Prentice-Hall, Inc., 1966) - No. 1, 2, 10.

Myers, L. M. Guide to American English, 4th ed. (Englewood Cliffs, N. J.: Prentice-Hall, 1968) - No. 5, 6, 9.

DEDUCTION: ANALYSIS EXERCISE

1. I've compiled this list of criminals, and they are all left-handed. Now, do you think I'd trust Elmer, whom you see over there eating with his left hand?

2. Is it love? He gave her a ring, didn't he? The setting of the ring scratched glass when she tested it, didn't it?

3. According to the accident report, one car was going 65 mph when the accident occurred. Don't you feel sorry for the innocent victims--the people in the other car, I mean?

4. Professor X must know his subjec He holds a Ph.D. degree, doesn't he?

5. Since you cannot spell very accurately, Miss Claypool, it is apparent that all of your English teachers have been inadequate.

6. Senator Y must be taking bribes, since by his own admission his living expenses exceed his official senatorial income.

7. Since you favor our country's selling garden hose to a Communist-dominated country, it is likely that you are a Communist yourself, and certain that you are a Communist sympathizer.

8. This used car has been driven very little; it was owned by an unmarried, middle-aged school teacher.

9. Try some of this cough medicine. It worked wonders for my sister's sore throat four years ago, and you are welcome to the rest of the bottle.

10. These are delightful snapshots of your children. Their mother must be a very beautiful woman.

Source:

Myers, L. M. Guide to American English, 4th ed. (Englewood Cliffs, N. J.: Prentice-Hall, Inc., 1968), p. 254.

the big A

Developed by:
Susan Suger

Concept/Competency

ARISTOTELIAN FORMAL LOGIC

Aristotle's three laws of formal logic--the Law of Identity, the Law of the Excluded Middle, and the Law of Non-Contradiction--can be useful aids in reasoning, up to a point, if handled carefully.

LEVEL 5 - 6 + TIME *Several 30-45 min. per.*

INTELLECTUAL EFFECTIVENESS

ENTRY CONCEPTS:
People seem to make certain kinds of statements when they are working out ideas through reasoning.

MATERIALS:
Chalkboard and chalk;
Writing and drawing materials;
Duplicated editorials and letters to the editor;
Background reference material on formal logic for the teacher

COGNITIVE:

TEACHER TASKS:	STUDENT ENABLING BEHAVIORS: *The student:*	 *In order to:*	 LEARNINGS:
INTRODUCTION: Say: "More than two thousand years ago, a Greek philosopher named Aristotle formulated three laws which seemed to him to describe the ways in which people habitually thought." Write on the chalkboard and read aloud: (1) Law of Identity: A is A. (2) Law of the Excluded Middle: Everything is either A or not-A. (3) Law of Non-Contradiction: Something cannot be both A and not-A.	listens and observes 	become acquainted with	the three laws on which Aristotelian formal logic is based.

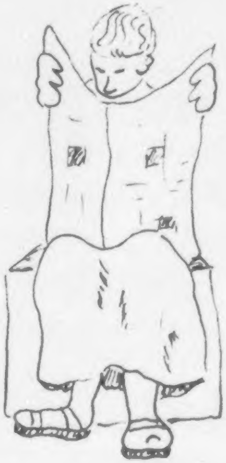
"These three laws form the basis for Aristotelian formal logic, which has been studied and practiced for many centuries."

(Allow students to examine and comment on the three laws.)

LESSON DEVELOPMENT

1. Say: "Suppose that instead of using the letter A in these three laws, we named some particular substance...for example, cheese:"	listens and observes	determine	procedures to be used in the first activity--building a base of knowledge and comprehension.
(1) Cheese is cheese. (2) Everything is either cheese or not-cheese. (3) Something cannot be both cheese and not-cheese. "Does this seem to 'make sense'? Okay. I'm going to give you the opportunity to become more familiar with these three laws of thinking through a technique called "slot substitution.'	cheese is cheese		
I will call out the number of one of the laws and give you a word to drop in the 'slot' formerly occupied by A.	listens and responds	learn thoroughly	the structure of Aristotle's three laws of logical reasoning.
First law. "Pigs." Second law. "Prunes."	"Pigs is pigs." "Everything is either prunes or not-prunes."		
Third law. "Popcorn."	"Something cannot be both popcorn and not-popcorn."		

(Have the students answer in unison or as individuals, changing the order of the laws and giving out a variety of nouns until the structure of the statements is completely familiar and the responses are automatic.)			
2. Say: "Now that you are familiar with Aristotle's three laws of thinking, carefully observe the language behavior of people around you. Look for examples of reasoning that seem to follow a form similar to these three statements.	listens	determine	procedures to be used in the second activity--application.
Keep track of the frequency with which this kind of reasoning occurs. When you have had a chance to gather some data, we will have a class meeting to discuss our observations. Then we will try to figure out a way to chart our observations."	observes language behavior of others	identify and tabulate	examples of reasoning structured like Aristotle's three laws.
3. Say: "A good place to see examples of the kind of reasoning described by Aristotle is in editorials and letters to the editor on the opinion pages of our city's newspapers.	listens	determine	procedures to be used in the third activity--analysis.
I have duplicated four such recent editorials and letters on these sheets. Everyone will have a copy of all four.			
You will be divided into four smaller groups. Each group will be responsible for analyzing one of the editorials or letters.			



Try to extract the basic argument and state it in the form of one of the laws that Aristotle recognized. Then try to determine whether or not it is a valid statement" (If necessary, explain the difference between validity and truth.)	analyzes editorials and letters to the editor	detect, isolate, and determine the validity of	basic arguments which take the form of Aristotle's three laws.
4. Say: "You have had enough experience with logical reasoning to notice that it sometimes causes perplexing difficulties. One way of dealing with such problems is to treat them with humor or satire. Lewis Carroll turned logic upside down or inside out in *Alice in Wonderland* and *Alice Through the Looking Glass*. So did Jonathan Swift in *Gulliver's Travels.*	listens	determine	procedures to be used in the fourth activity--synthesis.
See if you can compose a story, poem, skit, or panoramic picture which has an internal logic but which is nevertheless completely ridiculous or absurd." (Have students share their creations with classmates.)	develops a story, poem, skit, or panoramic picture.	deal humorously or satirically with	some of the perplexing difficulties caused by the limitations and incongruities of logic.
EVALUATION:			
5. (On the chalkboard, write three statements, similar to the ones below, structured on Aristotle's three laws. The content of the statements will depend on the interests and values of your students.)	listens and observes	determine	procedures to be used in the fifth activity--evaluation

Notice that subjects and complements are in the form of nouns, albeit qualified nouns in statements (2) and (3).)

(1) A black is a black.

(2) Everyone is either an educated person or an uneducated person.

(3) An action cannot be both a beneficial action and a harmful action.

Say: "On paper--or on the chalkboard--you might say that these statements appear to be logical. But further reasoning growing out of them or courses of action based on them could lead to serious difficulties. Why?"

(Discuss briefly.)

"Choose one of these three statements. Take a stand on it based on the practical, social, or ethical problems which might result from further reasoning or action based on the statement. Support and justify your stand."

(Display the resulting essays for members of the class to read and comment on.)

extrapolates from given statements	weigh	implications concerning statements based on Aristotle's three laws of reasoning.
considers a given statement	appraise	practical, social, or ethical problems growing out of the statement.

Given the opportunity to become familiar with Aristotle's three laws of formal logic, the student will learn to use them carefully and evaluate resulting implications thoughtfully.

Induction

Concept/Competency

INDUCTION

In the inductive reasoning process, we begin by carefully observing a physical phenomenon--many, many particular cases--and work up to a generalization--or hypothesis--which is a systematic explanation of the phenomenon.

Developed by: Susan Sager

LEVEL 5 - 6 +

TIME Several 30-45 min. periods

COGNITIVE: INTELLECTUAL EFFECTIVENESS

ENTRY CONCEPTS:

In deductive reasoning, we concern ourselves less with what is "real" than with what is "valid." When we are concerned with real phenomena, another kind of reasoning is more suitable.

MATERIALS:

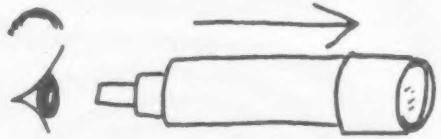
Materials for science reference and experimentation;

Charts listing steps in the scientific method and the problem-solving process;

Duplicated descriptions of experimental study for evaluation activity;

Background material on induction for the teacher

TEACHER TASKS:	STUDENT ENABLING BEHAVIORS: The student:	In order to:	LEARNINGS:
INTRODUCTION: Say and explain: "The inductive method of reasoning is the one primarily used in the experimental approach to knowledge.	listens	learn that	inductive reasoning is experimental in approach.
When we are using induction, we begin by carefully observing a physical phenomenon--many, many particular cases--and we work up to a generalization--a general statement which is a systematic explanation of the phenomenon. This explanation is called a hypothesis."	listens	become aware of	the basic process used in induction.



LESSON DEVELOPMENT:

1. Say: "Here's an example. You have been out catching grasshoppers. You have collected many, many grasshoppers. You begin by carefully observing them as examples of a physical phenomenon. In every one of these particular cases, you observe that the grasshoppers have six legs. You formulate a generalization about grasshoppers. Your hypothesis: All grasshoppers--at least all that you observed--have six legs." Particular Cases: Grasshoppers 1, 2, 3, 4, 5, etc. have 6 legs. Generalization - Hypothesis: Apparently, all grasshoppers have 6 legs.	listens to a sample induction 	reinforce awareness of	the terminology and the process used in one kind of induction.
(To be sure that the students understand the principle and basic process used in induction, have them supply the hypotheses for described phenomena such as the following):	listens and responds	become involved in	the first activity--building a base of knowledge and comprehension.
Experimental Group plant 1, 2, 3, etc., fed and watered according to instructions, died after being placed in a closet for 10 days.	supplies the hypothesis for the induction	demonstrate	the ability to formulate an adequate hypothesi when given sufficient information on which to base it:

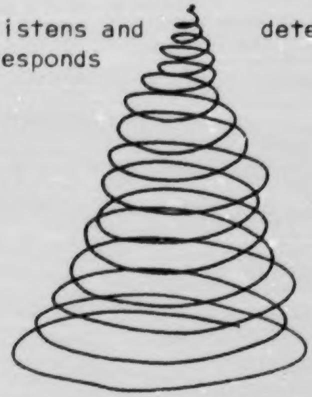
Control Group plant 1, 2, 3, etc., fed and watered according to instructions, were still alive after being placed near an unshaded window for 10 days.			
Hypothesis:__________________________	...Plants apparently need sunlight in order to live.		
(Note: It might be well to have the students notice that when we use the inductive process, a good deal of information usually has to be included describing experimental conditions and controls. Otherwise it is difficult to isolate the generalization or hypothesis that explains the phenomenon--in this case, the death of the plants in the experimental group.)	listens and assesses	become aware of	the need to include information describing experimental conditions and controls when using the inductive process to form hypotheses explaining natural phenomena.
(At this point, the students should be given the chance to apply their knowledge of the inductive process to a novel situation.	listens	determine	procedures to be used for the second activity--application.
The situation can be purely hypothetical, in which the students try to produce an adequate explanation for a selected phenomenon and then check their hypotheses through research in reference materials. See the lesson on Hypothesizing.	explains a phenomenon	demonstrate	the ability to apply hypothesizing skill to a novel situation.
	checks a hypothesis through research	determine	the accuracy of the hypothesis.
Or the situation can be a concrete one in which the students attempt to predict what will happen under given conditions and then check their hypotheses by carrying through with actual experimental projects.)	predicts what will happen	demonstrate	the ability to hypothesize concerning future effects.
	checks a hypothesis through experimentation	determine	the accuracy of the hypothesis.

3. Say: "Inductive reasoning, the scientific method, and the problem-solving process are closely related to one another.	listens and responds	recall and acquire	background needed in order to take part in the third activity-analysis.
At the beginning of our study of inductive reasoning, we stated the inductive process in its simplest form in order to distinguish it from deductive reasoning, the opposite process." (Have students briefly recall both processes and give an illustrative example of each.)			
"Today we are going to compare the scientific method and the problem-solving process. Both can be stated in five steps. And both can be compared to the five levels of thinking that we study and use in this class: recall, application, analysis, synthesis, and evaluation."	listens and observes	become aware of	ways in which the scientific method and the problem-solving process compare to the five levels of thinking described by Bloom.
(Display two charts side by side listing the steps used in the scientific method and the problem-solving process.)			

The Scientific Method[1] 1) Starting with a question, idea, theory, or hunch 2) Performing experiments and making tests 3) Observing carefully, gathering evidence, and checking it 4) Reaching a conclusion 5) Testing the conclusion	studies a chart	become familiar with	the steps used in the scientific method.
The Problem-Solving Process[2] 1) Gathering facts related to the problem 2) Stating the problem precisely 3) Brainstorming possible solutions 4) Making a hypothesis (selecting a possible solution) 5) Testing the hypothesis (finding out whether the solution works)	studies a chart	become familiar with	the steps used in the problem-solving process.
Ask: "What happens if the conclusion proves to be false or the solution to the problem doesn't work?" (Discuss.)			
"Here are some situations to think about and analyze:			
Take any well-known scientific discovery, such as the discovery of radium. Try to reconstruct, step by step, the process the scientist(s) might have gone through in making this discovery. You may use resource material.	does reconstructive thinking	rediscover	the process used by scientist(s) in making a particular discovery.

Minteer, Catherine, Words and What They Do To You (White Plains, NY, 1953), p. 19 (adapted).

[2] Kingston, Cecelia, Teacher's Guide for Effective Thinking: Ways of Problem Solving (White Plains, NY, 1977), p. 7 (adapted).

Or take any everyday practical or social problem. Analyze the problem, and describe the process we might go through in order to solve it."	analyzes a practical or social problem	discern	a process by which the problem might be solved.
. Say: "If you like to represent abstract concepts with concrete models, progress might be described as an ascending spiral. When you rise in this world, sometimes you have to go in circles to do it!	listens	become aware of	the possibility of representing abstract concepts with concrete models.
We discovered in our analysis activity that scientific investigation and systematic problem solving can be a circular process: if your conclusion proves false or your solution to the problem doesn't work...well, it's back to Step One again--or 'back to the drawing board' as it is sometimes expressed.	listens and responds	learn and demonstrate awareness that	scientific investigation and systematic problem solving are processes which can be represented by ascending spirals.
Can you give examples from your own experience where this has happened?" (Discuss briefly.)	gives examples from personal experience	demonstrate understanding that	induction is a circular process incorporating trial and error.
"Think of a tough, complex problem that seems to defy solution...or a problem for which solutions proposed so far seem inadequate, absurd, or unacceptable...	listens and responds	determine	procedures to be used for the fourth activity--synthesis.
or a problem whose solution by conventional methods would only lead to more and worse problems in some other area.			

Here are examples of two such dilemmas. You will be able to think of many others.

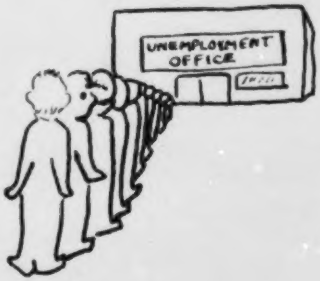
1) If we reduce unemployment, we will increase inflation. It is necessary either to accept rampant inflation as the price of full employment, or to accept high unemployment as the price of reduced inflation.

2) Some of the most prized groves of trees in Redwood National Park are being undermined by erosion caused by the clear cutting of trees on nearby private lands. But if we increase the size of the park to protect these groves for future generations, thousands of people in the lumber industry will lose their jobs.

Thinking about such problems has fallen into a rut. We go over and over the same old track, repeatedly doing what just doesn't work, and can't seem to break away to fresh, unfamiliar, but possibly useful new ideas.

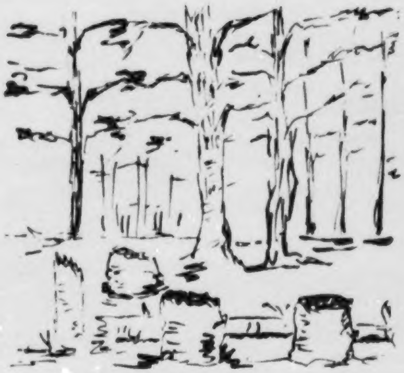
listens

hear and assess



listens

become aware that



examples of tough, complex problems resistant to solution by conventional means:

1) the paradox of simultaneous high unemployment and high inflation;

2) the conflicting demands of conservation and economics.

conventional thinking on tough problems can fall into a rut in which the same solutions that don't work are repeatedly tried without success.

Induction

Creative new solutions to stubborn old problems require divergent thinking, fluency, flexibility, and originality.	listens	become aware that	creative problem solving requires divergent thinking, fluency, flexibility, and originality.
Get together in groups of three or four. Select a problem. See if you can brainstorm some possible solutions. Choose the one you think best. Share the results of your session with your classmates."	interacts with others in a small group	develop	skills in... selecting a problem, clarifying a problem, brainstorming possible solutions, making hypotheses, and choosing the best hypothesis.

EVALUATION:

5. (Drawing on available resources, choose any well-known experimental study in the social sciences and duplicate, for distribution to the students, a brief, clear account of it.	studies a source sheet	become familiar with	material to be appraised during the fifth activity--evaluation.
Have the students evaluate the study for the care of its experimental controls and the soundness of its inductive reasoning.)	evaluates an experimental study	demonstrate	ability to judge: care of experimental controls; soundness of inductive reasoning.

After students have completed the activity, say:			
"The social sciences study the behavior of human beings in groups. Examples are sociology, anthropology, history, and geography.	listens	learn	the definition of the term social sciences and examples of different disciplines in the field.
The physical sciences study the behavior of non-living things. Examples are physics, chemistry, astronomy, and geology.	listens	learn	the definition of the term physical sciences and examples of different disciplines in the field.
When we conduct experiments, why are we on less certain ground in the area of social science than in the area of physical science?" (Discuss.)	considers	decide how	the nature of the material we are studying determines the degree of certainty we can feel about the generalizations we make.

Given instruction in inductive reasoning, the student will develop the ability to draw sound generalizations from careful observation of data, and will demonstrate awareness of the part induction plays in the scientific method and the problem-solving process.

LEVELS OF THINKING

1. recall
2. application
3. analysis
4. synthesis
5. evaluation

SCIENTIFIC METHOD

1. observe
2. make theory on hypothesis
3. experiment and gather evidence
4. interpret and make conclusion
5. test conclusion

PROBLEM-SOLVING

1. gather facts
2. state problem
3. brainstorm
4. make a hypothesis (selecting solution)
5. test hypothesis

The Scientific Method is a way of thinking about problems and solving them. The general rules used today were worked out by many men during hundreds of years. Scientists find it difficult to tell in what order they actually use the steps of the scientific method. The human mind probably does not actually solve problems in a systematic fashion. But, after the problem is solved, the scientist can use the scientific method to explain the problem and its solution in an orderly way. The formal plan has at least five check points:

(1) *stating the problem*
(2) *forming the hypothesis*
(3) *observing and experimenting*
(4) *interpreting data*
(5) *drawing conclusions.*

WORLD BOOK ENCYCLOPEDIA

the big non-A

Developed by: Susan Sager

Concept/Competency

NON-ARISTOTELIAN GENERAL SEMANTICS

Non-Aristotelian General Semantics provides a much more accurate system for "mapping" the realities of a scientific age than does Aristotelian Formal Logic.

LEVEL 5 - 6 + TIME *Several 30-45 min. per.*

COGNITIVE: INTELLECTUAL EFFECTIVENESS

ENTRY CONCEPTS:

Aristotelian Formal Logic can be useful in certain kinds of reasoning; but it has serious limitations as a description of physical reality.

MATERIALS:

Chalkboard and chalk;
Writing paper and pencils.
Duplicated exercises for analysis;
Background reference materials on general semantics for the teacher

TEACHER TASKS:	*STUDENT*		
	ENABLING BEHAVIORS:		*LEARNINGS:*
	The student:	*In order to:*	
INTRODUCTION:			
Say: "You are all familiar with Aristotle's three basic laws of thinking--the Law of Identity, the Law of the Excluded Middle, and the Law of Non-Contradiction."	listens	recall	facts previously learned about Aristotelian formal logic.
(Have the students state the laws and give slot-substitution statements structured on them.)	responds	demonstrate	comprehension of the three basic premises of Aristotelian formal logic.

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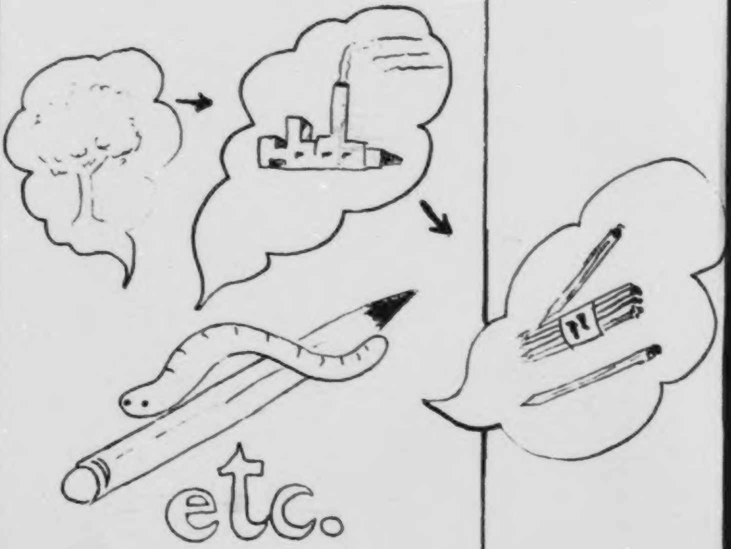
"These laws were formulated in a pre-scientific age, and were useful for centuries in helping people to reason. For many people, they still represent 'just plain common sense.' In recent times, however, as our scientific knowledge has grown by leaps and bounds, these laws of thinking have proved to be more and more inadequate as a description of reality. Do you have some ideas about why this might be so?" (Discuss briefly.)	listens and responds 	obtain	background information essential for an introduction to non-Aristotelia general semantics.
"In 1933, a Polish mathematician named Korzybski published a monumental work called Science and Sanity. He believed that if the method of the scientist could be applied to a study of our thinking and language habits, we should have fewer misunderstandings and conflicts.	listens	become acquainted with	the founder and goal of general semantics.
What does a scientist do?"	gives a summary	demonstrate familiarity with	the basic process scientists go through when developing new knowledge.
(Have students summarize the steps of the Scientific Method.)	(Wording will vary) He/she: 1. has a question, idea, theory, or hunch; 2. performs experiments and makes tests; 3. observes carefully, gathers evidence and checks it; 4. reaches a conclusion; 5. tests his/her conclusions.		

"Korzybski's method of studying language is called (write on board)... Non-Aristotelian General Semantics and is symbolized by a capital A with a minus sign over it (write on board)... $\bar{A}$. The Big Non-A!"	listens and observes 	learn	the name and symbol for one scientific approach to the study of language habits.
LESSON DEVELOPMENT:			
1. Say: "Korzybski, too, formulated three major laws. I'm going to list all three of them on the board for you with relatively little explanation. The first law may surprise you!"	listens and observes	determine	procedures to be used for the first activity--building a base of knowledg and comprehension.
(1) Law of Non-Identity: A is not A.	listens and observes	become acquainted with the	Law of Non-Identity
Vertical Non-Identity - The word is not the object.			Vertical: Distinguishing different levels of abstraction
Horizontal Non-Identity - Smith_1 is not Smith_2. Smith_1 today is not Smith_1 yesterday.			Horizontal: Differentiating individuals and different stages in continuity.
(2) Law of Non-Allness: A is not all A. The word does not represent all the object.	listens and observes	become acquainted with the	Law of Non-Allness

(3) Law of Self-Reflexiveness: We use language for talking about language; we make statements about statements; we make abstracts of abstracts of abstracts...	listens and observes	become acquainted with the	Law of Self-Reflexiveness.
(Allow students time to examine the three premises and speculate on their meaning.)	examines and discusses premises	interpret and interrelate	unfamiliar but provocative new ideas.
Say: "Korzybski's total writings are very complex and difficult, as you might guess. Today I'm giving you only the barest introduction. But as you get into the study of semantics--the meanings we attach to words--I think you'll find it not only enlightening but fascinating."			
2. Say: "Let's conduct some experiments which will help to illustrate the premises of general semantics."	listens and observes	determine	procedures to be used for the second activity--application.
(1) (Ask the students to put a piece of paper on their desks. Ask them to weigh it in their hands, feel the texture, hold it to the light, taste it, and mark it with a pencil. Then have them put the papers away, and ask how much they can do with the word paper. Can they do any of the former acts with the word alone? Do they sense the two levels?	handles and experiences a piece of paper 	distinguish	the difference between the tangible object and the word used to represent it.

Ask whether we can sit on the word chair or eat the word lunch. If this seems obvious, ask whether people worry about things that never happen; whether they judge a person's success by his possessions. Ask them what they think about an honor student who cheats; a student government that does not govern students; an "easy to repay" loan.) Ask: "Are these examples of confusing the word with the thing?" (Discuss.)	focuses on additional examples	clarify concepts; and to form the generalization that	the word is not the object.
(2) (Ask the students to choose one of the simplest objects in the room to talk about--a pencil will do. Tell them we chose something simple because we are going to try to say "all" about it. Ask them how long they think it will take to tell "all." Accept estimates.) Then say, "We will have to find out for ourselves." (Write briefly on the board each statement that is made, accept each contribution with encouraging remarks, and ask, "Is that all we can say?" Students will open up many topics for discussion. Some will talk about wood, others about graphite, others about manufacture or uses. Eventually one student will point out that there is no limit to the discussion, that each new topic opens up an entire field for talk.)	examines a pencil or other simple object	try to tell	"all" about an object.



non-verbal
statement

When students accept this viewpoint, ask, "How long do you think we can go on talking?"

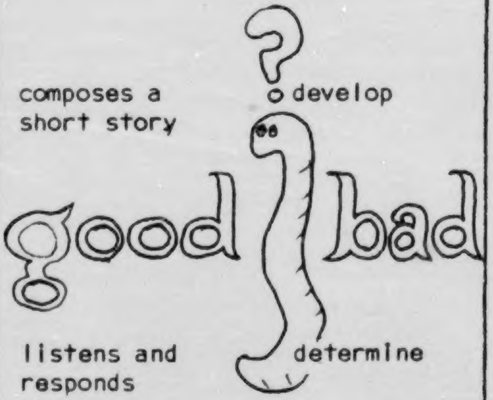
(When they decide that there is no limit to the time they could talk, accept their decision. It may take several class periods before the students volunteer their discovery, but if they are allowed to arrive at the conclusion themselves, it will make a lasting impression on them.)

(3) (Ask a student volunteer to make some kind of non-verbal statement to the class. This should be pure pantomime, done entirely without resorting to words. Students observing the statement should try to receive the message directly, without mentally translating it into words. Have another student make a statement about the first statement, again in a totally non-verbal way.)	uses or watches pantomime	make or see	a non-verbal statement... and then... ...a non-verbal statement about the non-verbal statement.
Ask: "Is it possible to communicate complex ideas without resorting to language? When you do use language, is it possible to avoid self-reflexiveness?" (Discuss.)	sums up the experience (Responses will vary.)	become aware of the virtual impossibility of expressing complex ideas non-verbally; and to form the generalization that	we use language for talking about language.

3. Say: "I have here an exercise which briefly describes 12 situations. Each one illustrates one of the major premises of general semantics or shows what might result due to a misevaluation in that area. Classify the items, marking them (1), (2), or (3) according to which law or its violation they best illustrate-- (1) Law of Non-Identity; (2) Law of Non-Allness; or (3) Law of Self-Reflexiveness. If a semantic misevaluation is involved, be prepared to explain how or why each misevaluation occurred."	listens and observes	determine	procedures to be used for the third activity--analysis.
(Distribute duplicated exercises. When tha students have had a chance to complete them, have a class meeting to see whether there is general agreement about the classification. Then discuss how or why misevaluations occurred in items marked (1) or (2).)	examines portrayed situations	detect and investigate	evidence of Non-Identity, Non-Allness, or Self-Reflexiveness and/or evidence of misevaluations in these areas.
4. Say: "You have all heard the word tragedy. What does it mean to you?" (Discuss.)	listens and responds	discover and interrelate	concepts necessary for completing the fourth activity--synthesis.

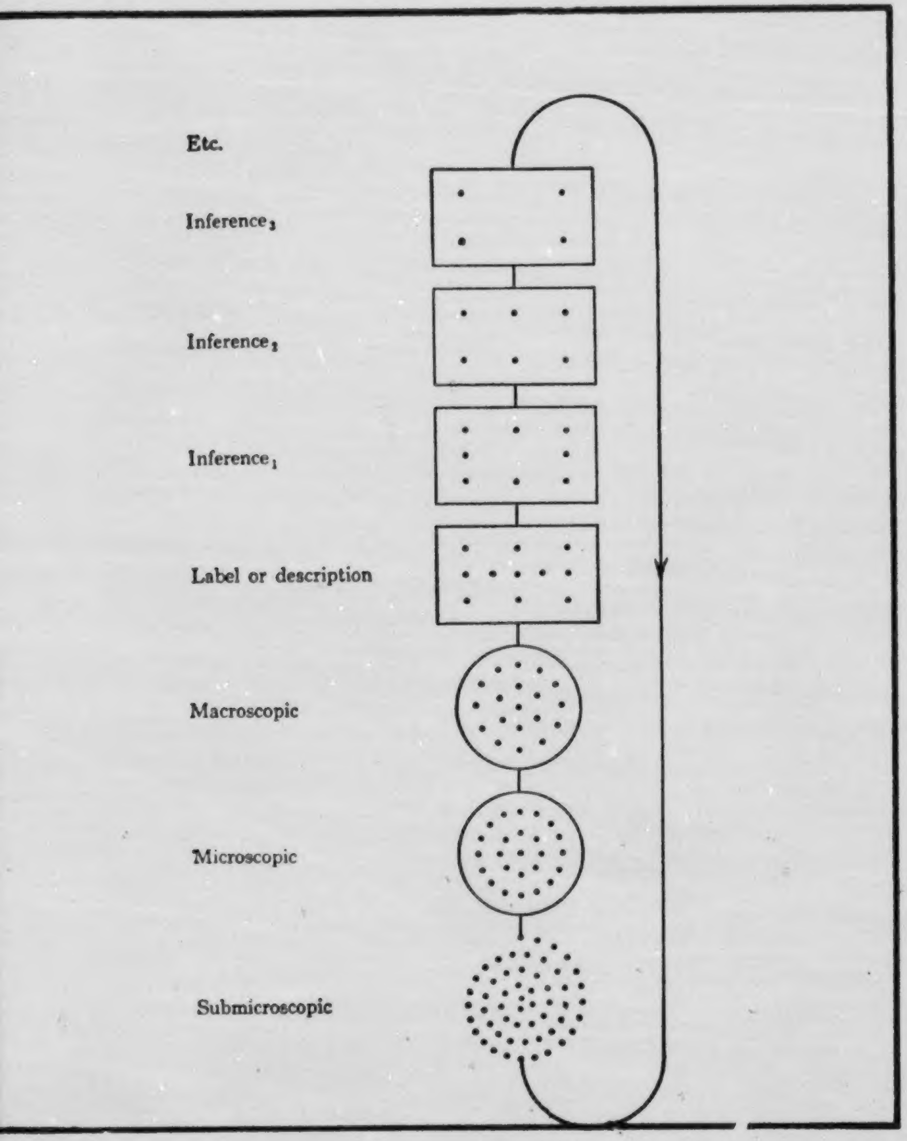
"Events occur in the animal, non-verbal world that are unfortunate or very sad. But it is only in the human, verbal world that tragedy in the strictest sense of the word--true semantic tragedy--can occur.

Do you feel a little confused at this point? Okay. Let me illustrate. No cat or dog ever committed suicide because its reputation was ruined by malicious gossip. No horse risked damnation or self-destruction through desperate acts to obtain the crown. Can you think of some more examples of purely human, semantic tragedies?" (Discuss.)	listens, imagines, and discusses	formulate	the idea of tragedy--in the strictest dramatic sense--as a purely human, semantic event.
"Write a short story in which the action of the plot is based on a semantic tragedy."	composes a short story	develop	a plot whose action is set in motion by a semantic mis-evaluation leading to tragedy.



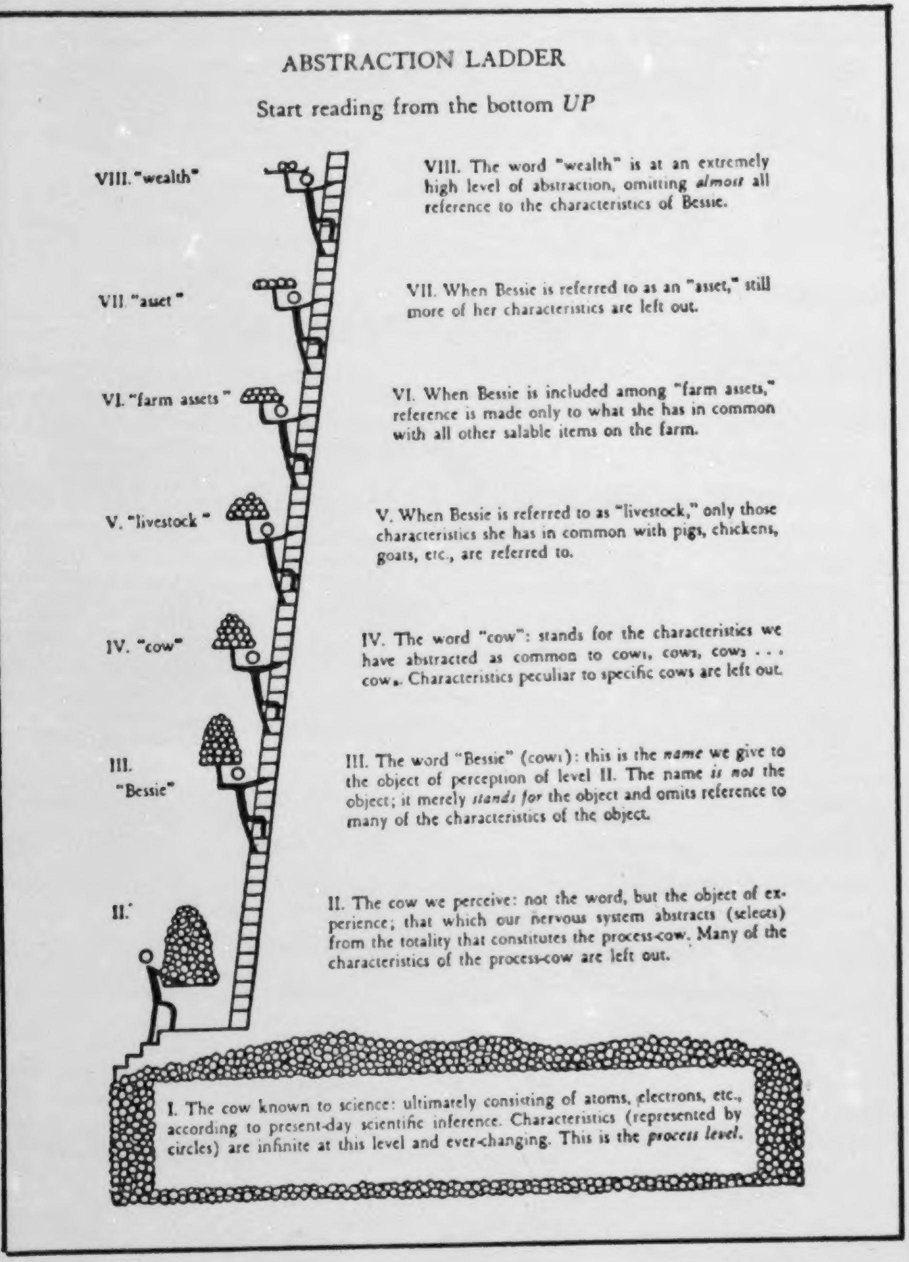
EVALUATION:

5. (Conduct a discussion or debate in which the following questions are considered:	listens and responds	determine	procedures to be used for the fifth activity--evaluation.
On what basis do we decide what is "bad" and what is "good"? When we have decided what is "good," how can we encourage it or bring it into being? What role might improved communication play in bringing about certain beneficial changes?	considers and discusses questions	clarify personal values on	criteria for judging whether something is "bad" or "good".
Recommend a specific change and decide how better language habits might help to bring it about.)	recommends a change	conclude	how the more responsible, scientific use of language might help to bring about a specific beneficial change.


Etc.
Inference$_3$
Inference$_2$
Inference$_1$
Label or description
Macroscopic
Microscopic
Submicroscopic

SCHEMATIC DIAGRAM OF
THE PROCESS OF ABSTRACTING

Adapted from Wendell Johnson, People in Quandries, Copyright ©1947, Harper & Row, Publishers, Inc. Used with permission by Harper & Row, Inc. (Adapted from A. Korzybski, Science and Sanity: An Introduction to Non-Aristotelian Systems & General Semantics. Lancaster, Pa: The Science Press, rev. ed., 1941.)



ABSTRACTION LADDER

Start reading from the bottom *UP*

VIII. The word "wealth" is at an extremely high level of abstraction, omitting *almost* all reference to the characteristics of Bessie.

VII. When Bessie is referred to as an "asset," still more of her characteristics are left out.

VI. When Bessie is included among "farm assets," reference is made only to what she has in common with all other salable items on the farm.

V. When Bessie is referred to as "livestock," only those characteristics she has in common with pigs, chickens, goats, etc., are referred to.

IV. The word "cow": stands for the characteristics we have abstracted as common to cow$_1$, cow$_2$, cow$_3$ . . . cow$_n$. Characteristics peculiar to specific cows are left out.

III. The word "Bessie" (cow$_1$): this is the *name* we give to the object of perception of level II. The name *is not* the object; it merely *stands for* the object and omits reference to many of the characteristics of the object.

II. The cow we perceive: not the word, but the object of experience; that which our nervous system abstracts (selects) from the totality that constitutes the process-cow. Many of the characteristics of the process-cow are left out.

I. The cow known to science: ultimately consisting of atoms, electrons, etc., according to present-day scientific inference. Characteristics (represented by circles) are infinite at this level and ever-changing. This is the *process level.*

Given an introduction to Non-Aristotelian General Semantics, the student will gain familiarity with three basic premises--the laws of Non-Identity, Non-Allness, and Self-Reflexiveness--and will demonstrate that he/she is becoming aware of their possible applications in human affairs.

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THE BIG NON-A: ANALYSIS ACTIVITY

____1. The radio Comedian, Bob Burns, once told about his uncle's invention...which consisted of a spot remover for removing spots left by spot removers.

____2. There's one reason, and only one, for Wilbur's misbehavior!

____3. Radio listeners fled cities in panic after Orson Welles broadcast an "eye-witness report" of an attack by Martians.

____4. When Galileo claimed that the sun, rather than the earth, was the center of our universe, he was severely persecuted.

____5. A discussion ended with no agreement reached. Both sides in the controversy had the attitude, "That is all there is to be said on the subject."

____6. A man went berserk, shooting strangers in the street because, "They were trying to get me."

____7. A magazine cartoon showed two camera fans pointing their cameras at each other, one camera fan taking a picture of the other camera fan taking a picture of the first camera fan taking a picture of the second camera fan taking a picture, etc., etc.

____8. I know everything there is to know about modern art, and I still don't like it!

____9. Bob Hope commented one time upon the remarkable new automobile models: In order to operate them, all you had to do was to push a button that pushed a button.

____10. Men working near "empty" gasoline drums carelessly threw down half-snuffed cigarette butts. This led to an ignited-vapor explosion which resulted in several casualties and caused thousands of dollars in damage.

____11. I don't know what to do with that child! I've already tried everything, and nothing works!

____12. Professor Josiah Royce of Harvard described the ideal map: If you are making a map of a territory that is to cover everything in the territory, it must include you and the map you are making since, of course, you and your map are in the territory you are mapping!

DESCRIPTION

Developed by: Susan Sager

Concept/Competency

COMMUNICATING

Of the several processes of communication -- description, narration, exposition, argumentation -- description is most concerned with figural content and spatial order.

LEVEL 1 - 6 TIME 3 30-minute periods

COGNITIVE: INTELLECTUAL EFFECTIVENESS

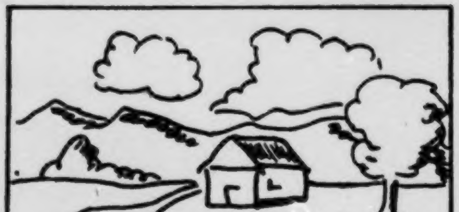
ENTRY CONCEPTS:
We use our five senses -- sight, hearing, touch, taste, and smell -- to gather impressions of our world. We can share these impressions with others through the process of description.

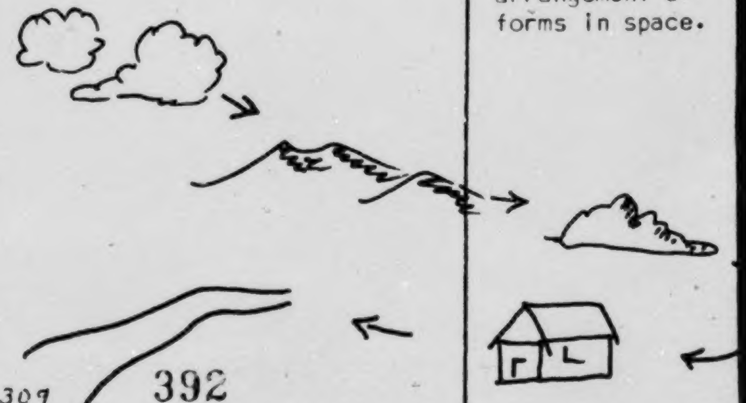
MATERIALS:
Large art prints with a variety of subjects and styles; materials for drawing, painting and writing.

TEACHER TASKS:	STUDENT ENABLING BEHAVIORS: The student:	 In order to:	 LEARNINGS:
INTRODUCTION: (Show one or more large art prints to the class -- non-objective painting, portrait, landscape with buildings, etc.) Ask, "What do you see?" (Allow free comment.)	looks at art prints	identify	content of the compositions.
LESSON DEVELOPMENT:			
1. Ask: "What is touching the top of this print? the bottom? the left side, as you see it?	examines art prints	become aware of	spatial arrangement of their content.

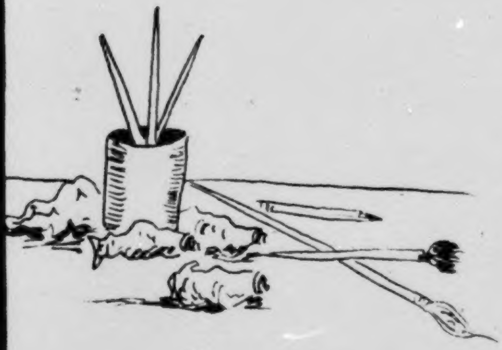
The right side? What is in the exact center? As you go from top to bottom, what do you see? As you go from left to right, what do you see?"	views content of art print in various sequences.	recognize	ordered arrangement of objects on the picture plane.
2. Say: "If you wished to describe a face, how would you do it in an orderly way? What would you describe first? How would you go about describing a human figure? a room? a house?" (As various students respond, keep them aware of the idea of order.)	applies new awareness of ordered arrangement of forms	determine	appropriate sequences for describing different kinds of figural content.
Say: "Let's analyze: What kind of order are we dealing with when we describe something? What are we concerned with?" (the arrangement of things within a certain space) "What might we call this kind of order? (space order -- spatial order)	ponders the question	isolate	significant elements involved in the process of description.
What orderly sequences might you use to describe something in space?" (top to bottom, left to right, inside to outside, center to perimeter, etc.)	thinks critically	distinguish	a number of possible ordered sequences for describing the arrangement of forms in space.

Describing - top to bottom





4. Say: "When you draw a picture, you are dealing with a space called a picture plane. How might you plan and organize your picture to fit your picture plane? What things will you consider? In what order?" (whole composition, major forms, details)	plans a composition	synthesize	concepts and generalizations about spatial order and the process of description.
(After discussion, provide the students the opportunity to plan and create their own compositions.)	creates an original painting	develop in tangible form	ideas about spatial organization and description.
EVALUATION:			
5. (Invite various students to describe something, in the classroom, orally or in writing. The rest of the students will see if they can identify what has been described. Have the class evaluate the descriptions for clarity, adequacy, and correct spatial order.)	describes something	demonstrate	the ability to formulate a description that is parallel in structure to the thing described -- that is, a description that is an accurate "map" of the "territory" it describes.



Given guided experience in viewing art prints, the student will become aware of the spatial ordering of figural content, and will develop the ability to describe what he/she perceives in a clear and ordered manner.

Concept/Competency

EXPOSITION

Developed by Susan Sager

COMMUNICATING

Exposition explains:

(1) *how a process works;*
(2) *why a phenomenon occurs.*

It is related to the scientific method.

LEVEL *1 - 6* TIME *2 or more 45-min per.*

INTELLECTUAL EFFECTIVENESS

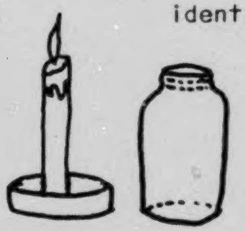
ENTRY CONCEPTS:

When we explain something in words, we need to organize what we say so that our message will communicate clearly and understandably.

MATERIALS:

Candle in heavy holder, pan of water, large wide-mouthed jar, matches, measuring devices, chalkboard and chalk; materials for writing and drawing

COGNITIVE:

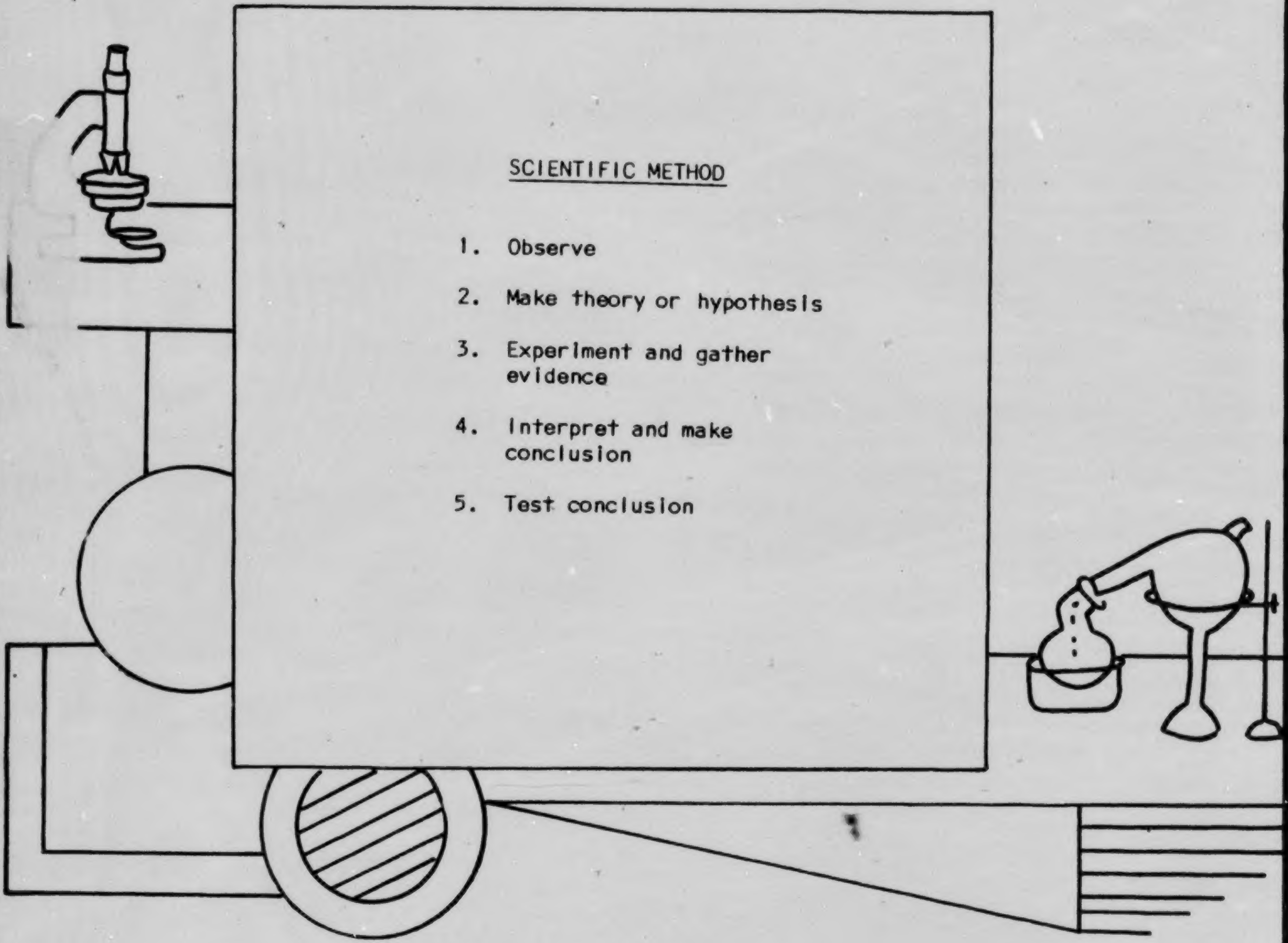
TEACHER TASKS:	STUDENT		
	ENABLING BEHAVIORS:		LEARNINGS:
	The student:	*In order to:*	
INTRODUCTION: (Perform the following demonstration: Without explanation, set up a candlestick in a pan of water. Light the candle. Carefully invert a large jar and place it over the lighted candle. Wait until the candle goes out and the water level rises in the jar. Invite free comment.)	observes 	identify	the steps taken in performing the demonstration and the results obtained.
LESSON DEVELOPMENT: 1. Ask: "What did I do? What happened as a result? Report only exactly what you saw. Does everyone agree on exactly what happened?	recalls the demonstration	report	exactly what was done and what happened.

Now. Can anyone explain this phenomenon? Let's repeat the process and see if the same result occurs a second time. What should we do to check carefully or measure exactly what happens?"	draws inferences	try to determine	the meaning of what happened.
	suggests controls	help replicate	the results of the experiment.
(Repeat demonstration experiment.)			
Say: "Do you need to revise your explanation? The process of explaining is called exposition.			
A tentative explanation of a natural phenomenon--something that appears to occur in a regular, predictable way in nature--is called a hypothesis. You have explained how this demonstration was performed and what happened as a result.	listens	grasp the meaning of	the terms: exposition revise tentative natural phenomenon hypothesis.
Who has a hypothesis that attempts to explain why the candle went out and the water level rose?" (Accept all hypotheses without evaluating them at this time.)	revises hypothesis	explain more satisfactorily	the observed phenomenon.
2. Say: "Now let's apply what you have learned. See if you can think of a good hypothesis tentatively to explain something you see happening every day. Examples: 1) Why does the sun 'rise' in the east and 'set' in the west? 2) Why do people walk on the ground instead of floating above it? 3) Why does water boil when it gets very hot and freeze when it gets very cold?"	recalls life experiences	become aware of	other natural phenomena that might be explained.

(Have students choose one phenomenon to think about. Accept all hypotheses without attempting to evaluate them at this time.) 	hypothesizes about why given natural events occur 	apply	newly-gained knowledge of the process of exposition.
3. At a subsequent session, say: "Expositon explains how -- how to perform a certain task, for example. Or exposition explains why -- why a certain natural phenomenon occurs, for example. Now, the process of explaining can get very mixed up and confusing unless it is done in an orderly way.	listens	review	the purposes of exposition: (1) to explain how a process works (2) to explain why a phenomenon occurs.
So, let's analyze the process..... break it down into its separate steps and see how it works." (Elicit a process akin to the scientific method.)	analyzes the process of exposition	identify	the steps used in the scientific method.

4. (Ask the students to choose one of the following: (1) Explain a process you are familiar with (Example: How to tie a pair of shoelaces). (2) Explain a phenomenon you understand (Example: Why ripples form when a rock is dropped in a pond). Suggest that students use numbered sentences or a comic-strip type series of pictures to explain their process, or a short essay or some kind of diagram to explain their phenomenon. Have them pretend that their audience knows absolutely nothing about their topic! They must be sure that their explanation is completely clear and understandable.)	organizes his/her information	compose (in words or pictures)	(1) a process theme (2) A phenomenon treatise.
EVALUATION:			
5. (Display students' expository work. Have students evaluate it for clarity and completeness.)	considers work produced by the class	judge what characterizes	effective exposition.

Given the opportunity to observe a demonstration, (1) identify the steps in the process, and (2) hypothesize about the meaning of the phenomenon, the student will work out the steps of the scientific method and will be able to share his/her understanding of the "how" of processes and the "why" of phenomena through effective exposition.



SCIENTIFIC METHOD

1. Observe
2. Make theory or hypothesis
3. Experiment and gather evidence
4. Interpret and make conclusion
5. Test conclusion

Several Kinds of Truth

Developed by: Susan Sager

Concept/Competency

EVALUATING

We can save much confusion and many futile arguments when we recognize that there are four kinds of truth and distinct ways of knowing each kind.

LEVEL 3 - 6 TIME *2 45-min. periods*

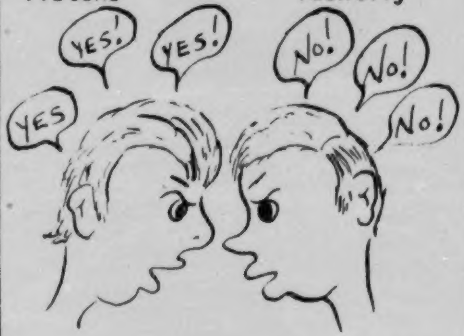
INTELLECTUAL EFFECTIVENESS

ENTRY CONCEPTS:

Sometimes it is relatively easy to settle a dispute about the truth of a given statement; but in other cases, it seems impossible to get everyone to agree.

MATERIALS:
Chalkboard, chalk
Duplicated exercises
Scratch paper
Pencils

COGNITIVE:

TEACHER TASKS:	STUDENT ENABLING BEHAVIORS: *The student:*	 *In order to:*	 LEARNINGS:
INTRODUCTION: Say: "Even in your short lives, all of you have had many arguments about 'the truth'. Right? Did you know that great thinkers have been arguing about what 'truth' is for thousands of years? Today we are going to try some activities which may help you to gain some new insights about truth. To begin with, we will get some idea of what we already know about this by taking truth as the topic for our class meeting. Circle up, everyone.	listens  YES YES! YES! No! No! No!	identify	the subject of the lesson and some of the problems surrounding it.

LESSON DEVELOPMENT:

1. (Conduct a Glasser-type open ended discussion while seated in a circle. As discussion leader, make no value judgments but lead the students to think by the use of chain questioning: follow every response not with an answer but with yet another related question, somewhat in the manner of Socrates.

Questions might be similar to the following:

1) Why do people often argue about what is true?
2) What is "truth"?
3) How do we determine whether or not something is true?
4) Is there more than one way that something can be true?
5) Is there more than one kind of "truth"?

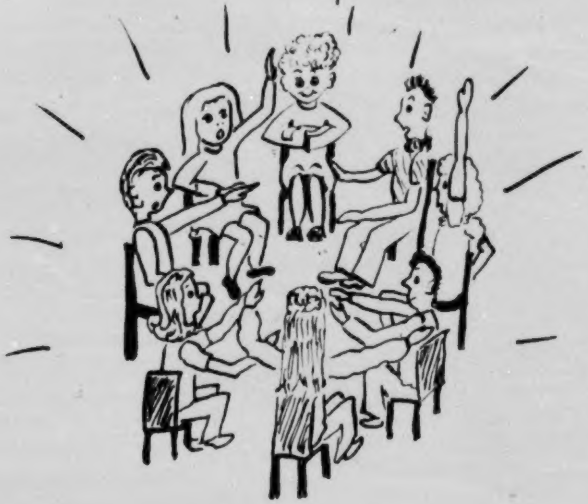
As the students here are dealing with--and confusing--several levels of abstraction and several different phenomena under the single label of truth, the discussion should be lively, heated, and rather incoherent.

After about ten minutes, suspend the meeting and have the students return to their regular seats and face the board.)

discusses

determine

the group's general knowledge concerning the abstract concept, truth.



2. Say: "We aren't likely to settle anything this way, so let's try another approach. See if you can apply your knowledge of truth to some 'true' statements that I am going to write on the board." (On the left-hand side of the chalkboard, write: 1) She really loves me. 2) Columbus discovered America. 3) Two times five is ten. 4) Water freezes at 32° F. (0° C.) and boils at 212° F. (100° C.).)	listens	determine	the process to be used during the second phase of the lesson.
Read all four statements aloud and ask: "Can all of these statements be considered true? Are they all true in the same way?	considers	judge	whether all four statements are true and whether they are true in the same way.
Instead of trying to explain why just now, think of some more statements, from your own previous learning and experience, that could be considered true in the same ways that these are true." (Spaced out across the board, write number headings for the categories 1), 2), 3), 4). Elicit sample "true" statements from the students and list each one under the numbered heading where it seems to belong. Continue until there are two sample statements under each heading.)	collects	organize	sample true statements of several kinds drawn from previous experience.

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Several Kinds of Truth

Say: "Examine again my sample statements and yours. How are they alike? different? Think of some more examples. This time I am going to ask you how to categorize them."	examines	categorize	examples of several kinds of true statements.
(As a student volunteers a statement, have him also categorize it. Ask the rest of the group whether it is correctly categorized.)	produces	analyze	several kinds of true statements.
When there are a total of three or four statements in each category, ask: "What do all the statements in Class (1) have in common?	analyzes	isolate	characteristics common to the statements in Class (1)
By what means do you know that such statements are true? Who has a word that can differentiate our way of knowing this kind of truth from other ways of knowing?	generalizes	discover	a suitable descriptive label for the kind of truth exemplified by the statements in Class (1).
(Elicit a number of descriptive synonyms that might serve accurately to label this category of truth.)			
Summing up, say: "We might call this kind of truth intuitional truth because we can only know it through hunches, revelations, or intuitions."			
(Write category label above column (1). Continue in this same manner with each of the next three categories. Elicit information and descriptive synonyms about each one in turn and, finally, provide a label for it: (1) institutional (2) testimonial truth (3) mathematical truth (4) experimental truth)	analyzes generalizes	isolate discover	common characteristics of statements in Classes 2, 3, 4. suitable descriptive labels for the kinds of truth exemplified by statements in Classes 2, 3, 4.

4. "I'm going to divide the class into four groups. We will have a drawing, and each group will draw a slip that has the name of one kind of truth on it.	listens	determine	procedures and possible activities to be used during the creative phase of the lesson.
Later on, each group can get together and devise some kind of entertainment for the class dealing with your kind of truth. You may want to put on a skit, compose a poem or a song, or conduct a debate."	improvises	originate	skits, poems, songs, or debates illustrating four kinds of truth.
EVALUATION:			
5. (To give practive in distinguishing among several kinds of truth, duplicate an exercise adapted from that in Myers, pp. 179-180. Read instructions aloud and discuss. Read each sentence aloud and give students time to mark it I (intuition), T (testimony), M (mathematics), E (experimentation), and/or X if debatable or untrue.	appraises	decide	whether given statements illustrate intuitional, testimonial, mathematical or experimental truth.
Afterwards, have students tell why they marked each sentence as they did.	presents evidence	defend	his own evaluations.

Given the opportunity to recognize his own concepts about truth; provide examples of true statements from his life experience; analyze and categorize different kinds of true statements; utilize his new knowledge in creative activities; and accurately distinguish and evaluate given true statements, the student will deal appropriately with communications involving different kinds of truth.

EVALUATION EXERCISE

1. My son would never tell a lie.
2. The defendant was seen leaving the bank, carrying a canvas bag in his left hand.
3. When you kick our television set, it comes on strong.
4. If we have estimated the mass of the sun correctly, and estimated the rate of its burning accurately, we might predict that the lights will go out in about ten billion years.
5. The Sophomore Sensation scored 29 points per game this year and made 90 per cent of his free throws.
6. Since I've been through the same experience, I know how you feel.
7. The Sound of Music won several awards that year.
8. Tea is better than coffee.
9. In WWII, the Allies landed in France on D-Day, June 6, 1944.
10. Something tells me that this is going to be my lucky day.
11. If your room is 12 feet wide and 16 feet long, you'd better buy at least 192 pieces of 12-inch floor tile.
12. Aspirin is known as an aid in lowering the body temperature of a person who is feverish.
13. The reason why I am able to hit so many home runs is that I wear these beautiful argyle sox that cost only 89 cents a pair.
14. In my oven it would be best to cook that bird about 20 minutes per pound.
15. I know he's a two-time loser with a record for safecracking, but I feel that Mr. Blackheart is a man I can trust.
16. Six times 9 is 54, that is, in a base-10 number system.
17. The satellite was observed as it passed overhead last night.
18. You can be immunized against measles.
19. The safest landing speed for that plane under normal conditions is 150 knots.
20. Prices on the stock market in the United States fell rather drastically in 1929.
21. Those were undoubtedly the best lamb chops in the whole world.
22. If we can maintain this speed, we should be in Los Angeles before 10 P.M.
23. Air occupies space and has weight.
24. With you by my side, there's nothing in this world I cannot accomplish.
25. If it follows the pattern of past performance, that clock will run down in 7 hours and 43 minutes.

Adapted from L.M. Myers, GUIDE TO AMERICAN ENGLISH, 4th Edition, © 1968, p. 255. By Permission of Prentice-Hall, Inc., Englewood Cliff, N.J.

Concept/Competency

EVALUATING

—— REPORTS ——
——INFERENCES ——
-VALUE JUDGMENTS-

Reports, inferences, and value judgments all have their place in human communication. But communication is much clearer -- and misunderstandings are far less likely -- when we can distinguish among the three.

Developed by: Susan Sager

LEVEL 3 - 6 TIME 4 30-min. periods

INTELLECTUAL EFFECTIVENESS

ENTRY CONCEPTS:
After witnessing any given situation, two or more onlookers are likely to disagree about what "actually" happened.

MATERIALS:
Any large, interesting photograph or drawing depicting some human activity or situation; Chalk, chalkboard; pencils, paper

COGNITIVE:

TEACHER TASKS:	STUDENT ENABLING BEHAVIORS: The student:	 In order to:	 LEARNINGS:
INTRODUCTION: (Display the picture selected for the lesson. Ask the students to examine it silently for a few moments and speculate about what might be happening.	observes	determine	what might be "happening" in a displayed picture.
Spaced well apart, write three headings on the board: Reports, Inferences, Value Judgments.) Say: "If you were writing a news story about this scene or giving evidence in court, you would have to limit yourself to reporting only what you could actually see....reporting just the facts.	listens	determine	the meaning of the terms reports, inferences, and value judgments and the necessity of being able to distinguish among them.

You could not guess about what was happening or why....that's called an inference.

And you could not indicate whether you thought it was right or wrong, good or bad....that's called a value judgment.

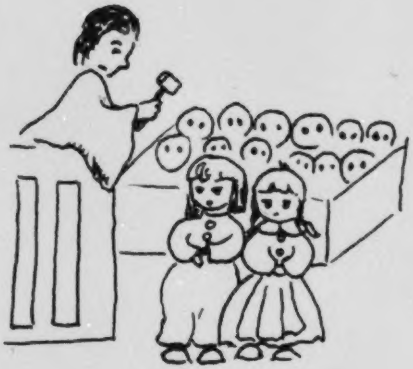
Inferences and value judgments are important and necessary. But they do not belong in a news story or in court testimony, which calls strictly for the reporting of pure facts."

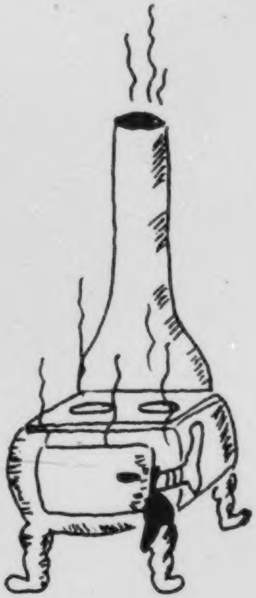
LESSON DEVELOPMENT:

1. Ask: "Can you make a statement about what you see here that is purely a report?"	states	demonstrate	examples of reports about the displayed picture.
(As statements are given, have the class determine whether or not they are reports.)	examines	distinguish	reports from statements that are not reports.
Ask leading questions such as:			
"Can you actually see that? Did you have to guess about that? Did you weigh that against your system of values?"			
(Continue until several report statements have been passed upon and listed.			
Go through the same procedure, this time listing inferences.	states	demonstrate	examples of inferences about the displayed picture.
Have the class decide, as they are elicited, whether each statement is an inference.	examines	distinguish	inferences from statements that are not inferences

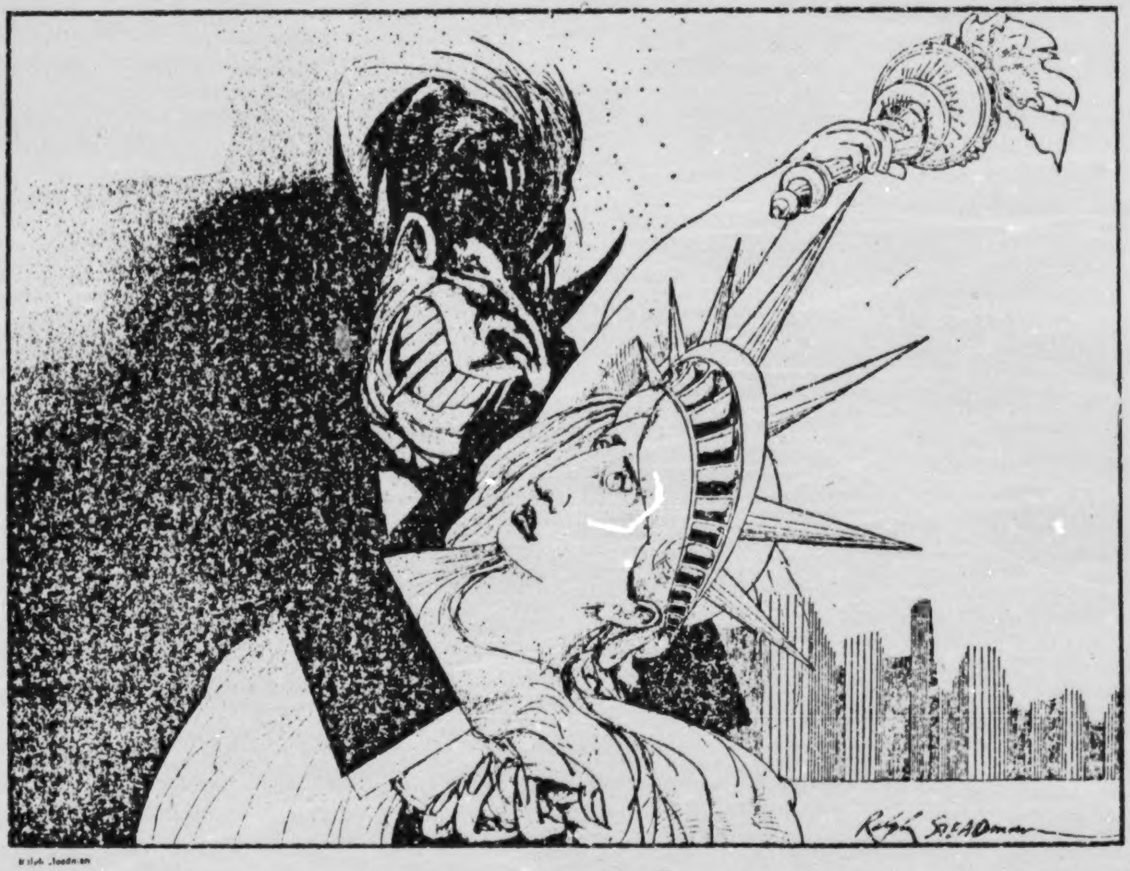
Elicit several value judgments, some positive, some negative.	states	demonstrate	examples of positive and negative value judgments about the displayed picture.
Again, have the class decide whether each is correctly classified.)	examines	distinguish	value judgments from statements that are not value judgments
2. (Ask two students to pantomime an incident, using much action and expression.	pantomimes	perform	an incident.
Ask another student to tell, as pure report, what he saw. Discuss.	describes	demonstrate	pure factual report.
Ask a second student to describe the same incident again, this time including inferences and value judgments. Discuss.)	describes	demonstrate	report colored by inferences and value judgments.
3. (Ask the students to think of an incident they have observed personally -- or to invent an incident. Ask them to write two versions of the same incident: one paragraph which is pure report -- "just the facts, man" -- and a second paragraph which includes plenty of inferences and value judgments along with telling "what happened."	composes	demonstrate	the distinction between pure factual report and report colored by inferences and value judgments.
Ask volunteers to read their two paragraphs for the class to compare and contrast -- as description which is pure report and as description which is colored by inferences and value judgments. Is there sufficient difference in the telling of the two versions?	listens	compare and contrast	examples of report and report colored by inferences and value judgments.

4. Ask the students to draw very interesting provocative pictures.	draws	create	an interesting provacative picture.
Each student then gives the picture to a partner, who writes down the wildest, funniest, most far-out speculations that he can think of about the situation pictured.	composes	produce	a wild, funny story making outrageous inferences about a pictured situation.
EVALUATION:			
5. Allow the students to conduct a mock trial. For example, Hansel or Gretel could be tried for the murder of the witch. Judge, jury, lawyers, and onlookers all should be careful to distinguish true reports (and pseudo reports) from inferences and value judgments in the statements of defendant and witnesses.	conducts a trial	use what he has learned about	reports versus inferences and value judgments.





(Sample of cartoon for display.)



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Given an opportunity to
recognize, formulate, and
use reports, inferences, and
value judgments, the student
will demonstrate the ability
to distinguish among them and
recognize the importance of doing so.

SILENT SPAGHETTI

Developed by: Carole Draper

Concept/Competency

BASIC CREATIVITY: FLUENCY

Items which have special characteristics can be compared with other items of similar characteristics.

LEVEL K - 6 TIME 15 - 20 minutes

ENTRY CONCEPTS:

--The ability to elaborate

MATERIALS:

Paper & pencil
or
Tape recorder

CREATIVITY

TEACHER TASKS:

COGNITIVE:

INTRODUCTION:

The teacher will display a piece of uncooked spaghetti for the students to see.
OR...the teacher may give each child a piece of uncooked spaghetti to examine.

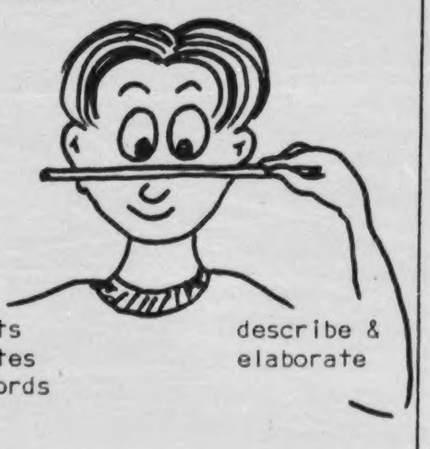
She will ask the students to describe the spaghetti. During the discussion, the students will hopefully use the terms long and thin.

LESSON DEVELOPMENT:

1. The teacher will then ask the students to list or record all those things they can think of that are long and thin.

STUDENT

ENABLING BEHAVIORS: *The student:*	*In order to:*	LEARNINGS:
observes	describe	spaghetti.
lists writes records	describe & elaborate	on those things that are long and thin.



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CREATIVITY

The man who follows the crowd, will usually get no further than the crowd. The man who walks alone is likely to find himself in places no one has ever been before.

Creativity in living is not without its attendant difficulties, for peculiarity breeds contempt. And the unfortunate thing about being ahead of your time is that when people finally realize you were right, they'll say it was obvious all along.

You have two choices in life: you can dissolve into the mainstream, or you can be distinct. To be distinct, you must be different. To be different, you must strive to be what no one else but you can be...

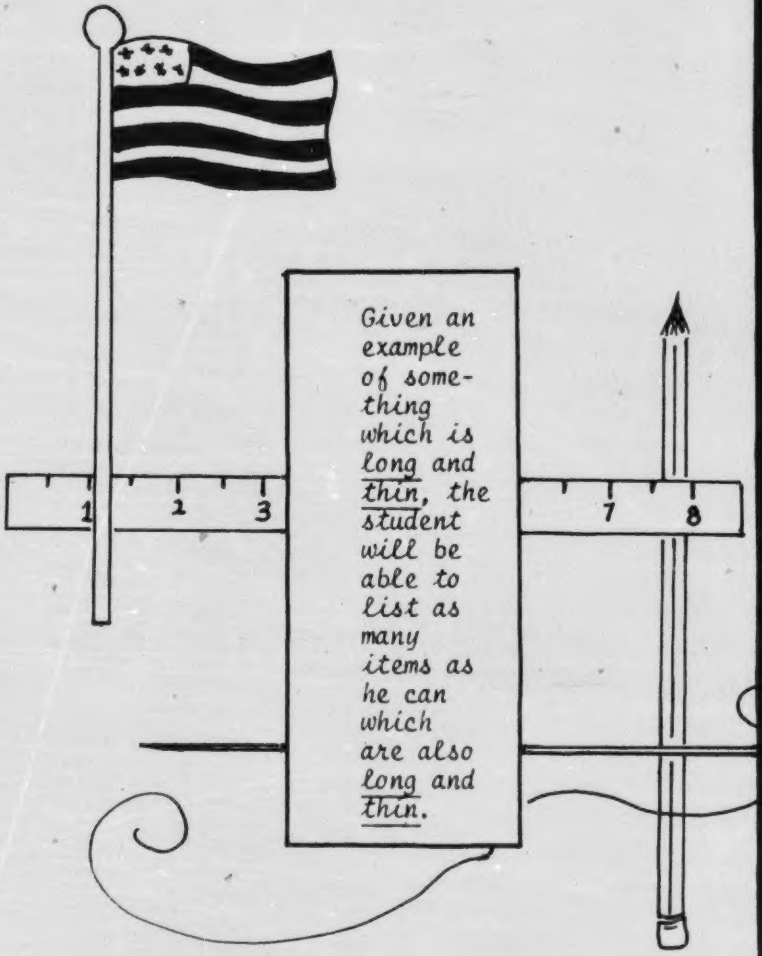
Alan Ashley-Pitt

EVALUATION:

The teacher and students will discuss and compare their thoughts and ideas.

Why do you think these things are long and thin?

Would the function be the same if they were short and fat?



Given an example of something which is long and thin, the student will be able to list as many items as he can which are also long and thin.

MARSHMALLOW MADNESS

[illegible]

Concept/Competency

BASIC CREATIVITY: ORIGINALITY

The unusual does occur within the ordinary.

LEVEL *Primary* TIME *30 - 45 minutes*

ENTRY CONCEPTS:

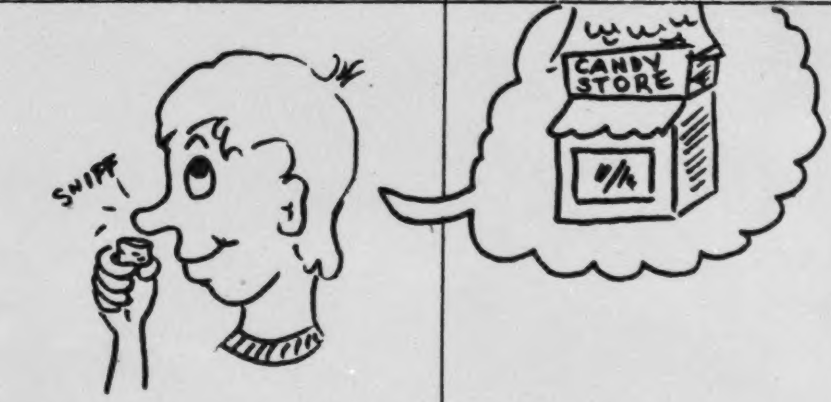
--The ability to look carefully
--The ability to write in alliterative form

MATERIALS:

1 marshmallow per child (or any other food you may want to use)

Paper
Pencil

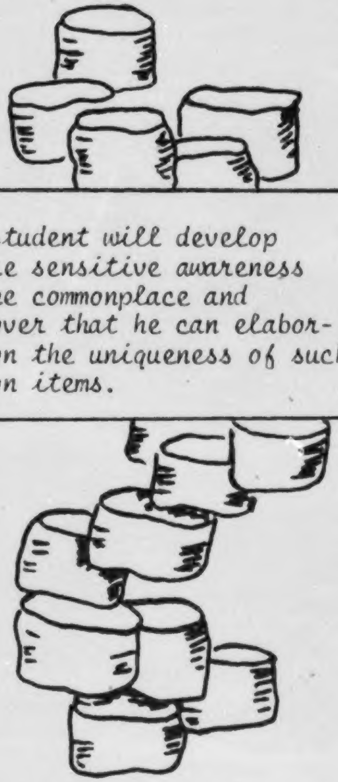
COGNITIVE: CREATIVITY

TEACHER TASKS:	STUDENT ENABLING BEHAVIORS: *The student:*	 *In order to:*	 LEARNINGS:
INTRODUCTION: The teacher will ask each child to take a marshmallow. The teacher will tell the child he may do whatever he wants with the marshmallow---smell it, taste it, squeeze it, shake it, pinch it. The teacher will then ask the child what it reminds him of.	 		
LESSON DEVELOPMENT: 1. The teacher will have the student write a brief description of the marshmallow.	writes states	describe analyze	the characteristics of a marshmallow.

2. The teacher will have the student write or tell a story or poem in alliterative form. EXAMPLE: Marshmallow Madness makes me mean.	writes reports	describe comprehend	the application of symbolic patterns.
3. The teacher will have the student create a dreaded, new disease for which they must devise a cure.	creates designs	synthesize improvise develop	uncommon uses for a common item.

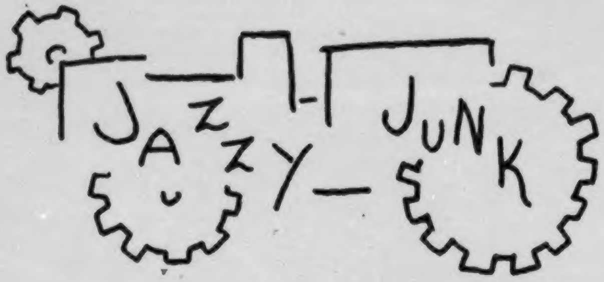
EVALUATION:

The students will be able to elaborate on any topic presented to them.



The student will develop a more sensitive awareness of the commonplace and discover that he can elaborate on the uniqueness of such common items.

From the book, IDEAS FOR LEARNING CENTERS by Elaine Moore and Jerri Greenlee. Copyright ©, 1974, by Fearon Publishers, Inc. Reprinted by permission of Fearon Publishers, Inc.



Concept/Competency

PLANNING: ORGANIZING ABILITIES

Items are constructed out of many objects.

Developed by: Carole Draper

LEVEL K - 6 TIME 1 hour

ENTRY CONCEPTS:

--The ability to combine materials
--The ability to construct

MATERIALS: Magnet, can opener, clothes pin, sponge, baseball bat, tennis racquet, marbles, key chain, bottle cap, spool of thread, 5 forks, peanuts, box of hair pins, a shovel, toothbrush, screw, box

CREATIVITY

TEACHER TASKS:

COGNITIVE:

INTRODUCTION: The teacher sets the stage by telling the children they are "to imagine they are a night watchman working in a warehouse. You have a lot of time to kill and you're bored. You then notice a big box of assorted articles brought in after a rummage sale."

LESSON DEVELOPMENT:

(1) The teacher asks the students to sort through the box.

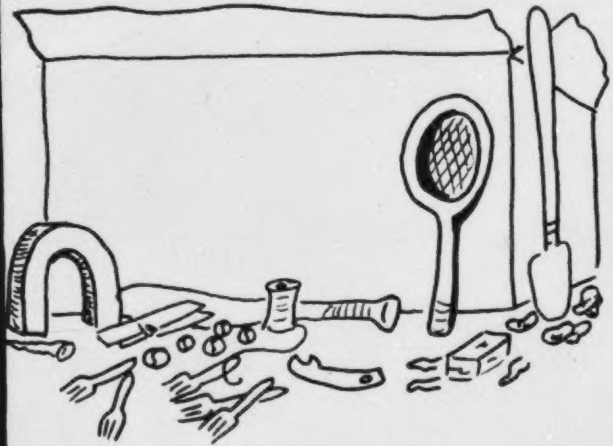
STUDENT

ENABLING BEHAVIORS: The student:	In order to:	LEARNINGS:
uncovers	analyze	various objects.
sorts through	examine	

(2) The students are to combine these objects, or their parts, in any manner they choose in order to create a new item.	constructs	synthesize	these objects into a new item.

EVALUATION:

The teacher and children can conduct a "fair" in which their objects can be displayed.



Given many and varied objects, the student will create a brand new item.

Adapted. From INVITATIONS TO THINKING AND DOING by R. E. Myers and E. Paul Torrance, © Copyright, 1964, by Ginn and Company (Xerox Corporation). Used with permission.

THIMBLE THOUGHTS

Concept/Competency

COMMUNICATION: FLUENCY

Thought processes can be expanded by elaborating on the usefulness of a simple object.

Developed by: Carole Draper

LEVEL K - 6

TIME 15 minutes

ENTRY CONCEPTS:

--Ability to verbalize ideas

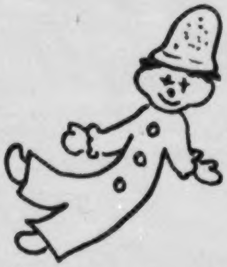
MATERIALS: A thimble (or any other small object)

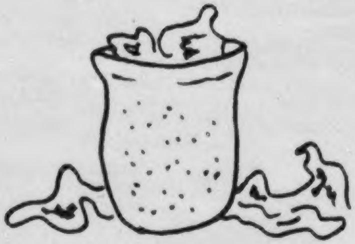
COGNITIVE: CREATIVITY

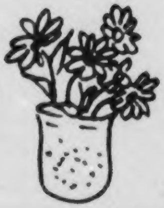
TEACHER TASKS:	STUDENT ENABLING BEHAVIORS: *The student:*	*In order to:*	LEARNINGS:
INTRODUCTION: The teacher displays a thimble and asks the questions: "What kinds of uses can you think of for this thimble?"			
LESSON DEVELOPMENT: The teacher has the student write down as many ideas as he can think of which describe the uses of a thimble. If the student is unable to write he may verbalize his ideas.	writes verbalizes describes elaborates	list and formulate	unusual uses for an object.

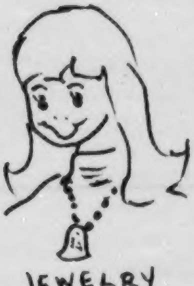
EVALUATION:

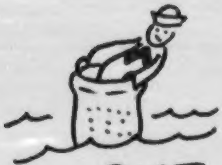
The students and teacher will discuss those ways in which a thimble can be used. The student may wish to draw or construct different ways the thimble can be used.


HAT

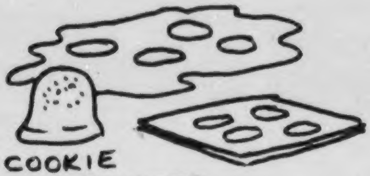

WASTEBASKET

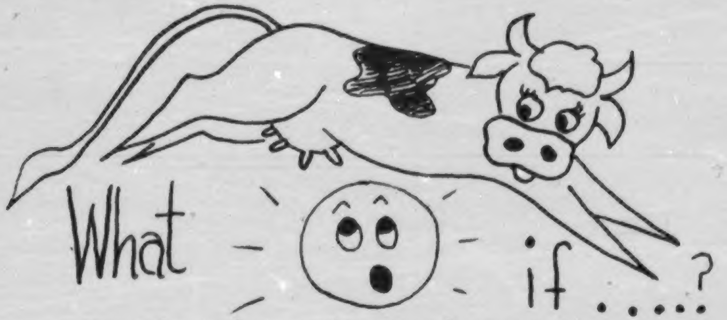

FLOWERPOT


JEWELRY


BOAT

The child will be able to enumerate many uses of a thimble (or other object) in order to strengthen and expand his imagination.


COOKIE CUTTER



Developed by: Carole Draper

Concept/Competency

FORECASTING

Conclusions can be drawn from unusual situations.

LEVEL K - 6 TIME 30 minutes

ENTRY CONCEPTS:

--The ability to image effects

MATERIALS: Pencil and paper
or
Tape recorder

CREATIVITY

COGNITIVE:

TEACHER TASKS:	STUDENT ENABLING BEHAVIORS: The student:	In order to:	LEARNINGS:
INTRODUCTION: The teacher will display a picture of an unusual occurrance, such as the cow jumping over the moon, or the earth as a different shape.			
The teacher will encourage discussion concerning the consequences of a jumping or flying cow and/or the differently shaped earth.			
LESSON DEVELOPMENT:			
1. The teacher will describe an unusual situation by the use of pictures, recordings or verbalizations.	listens absorbs notices	hear and interpret	the basic elements of the story.

What if?

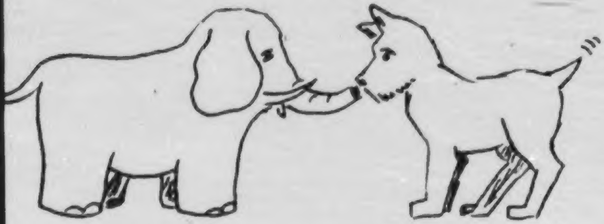
These situations may include: What if
elephants were the size of a dog?
What if everyone's hair turned orange?
What if there was no more sunlight?
What if the earth were square as a cube?
What if all the oceans dried up?
What if......?

2. The teacher will ask the child to determine what might be the consequences of such a situation.

EVALUATION:

The teacher and students will contrast the situations with the consequences concluded by the students.

Which of these situations you have described would be the most frightening?



Which do you think would be the funniest?

list
write
talk
discuss
conclude

explain
and
conclude

that certain situations will determine certain consequences (cause & effect relationship).

The student will be able to interpret a given story and make inferences to its meaning.

BUMPER STICKER SERENADE

Developed by: Carole Draper

Concept/Competency

DECISION MAKING

An individual's ideas can be expressed in numerous ways if given the opportunity.

LEVEL 4 - 6 TIME 45 minutes

ENTRY CONCEPTS:

--The ability to write
--The ability to express one's ideas

MATERIALS:

Scratch paper
Adhesive back paper or strips
Crayons
Colored pencils
Marking pens

CREATIVITY

TEACHER TASKS:

COGNITIVE:

INTRODUCTION:

The teacher will ask the students if they can recall any bumper sticker sayings that they have seen. After discussion the teacher will tell the students they are going to make their own bumper stickers. First, she needs to set up some guidelines for the children to follow:

(1) The sticker must be easily read.
(2) The motto must be one your parents would allow on their car.

STUDENT

ENABLING BEHAVIORS:		LEARNINGS:
The student:	*In order to:*	
recalls	make	own bumper stickers.

LESSON DEVELOPMENT:

1. The teacher will then have the student make a rough-draft of his bumper sticker.	creates, illustrates, draws, designs	express and portray	a meaningful idea, slogan, motto.
2. The teacher will have the student copy his rough-draft into final form.	copies	display	his bumper sticker.

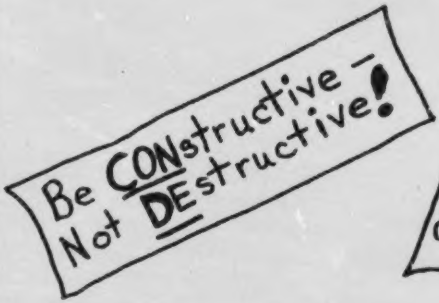
EVALUATION:

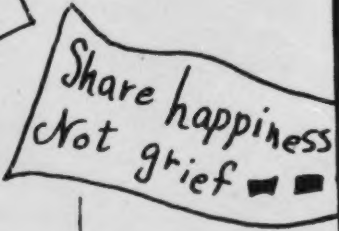
The students and teacher will look carefully and examine closely the bumper stickers.

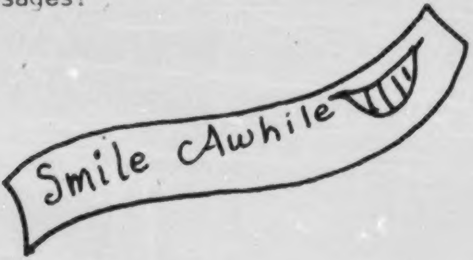
Is the sticker easily read?

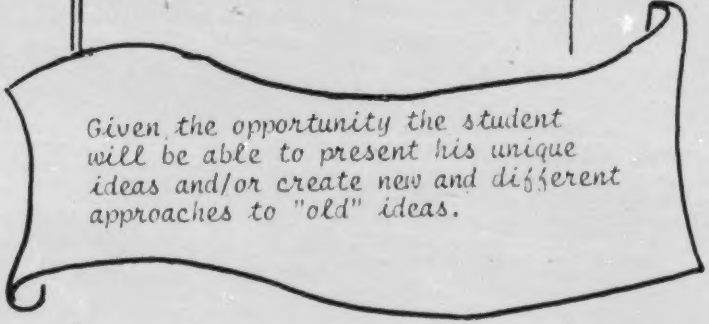
Would your parents allow these stickers to be placed on their cars?

Which stickers provide the most meaningful messages?

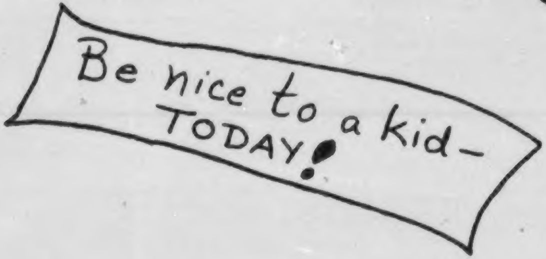

Be CONstructive -
Not DEstructive!

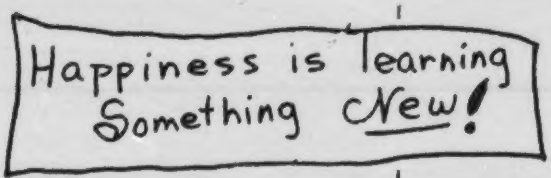

Share happiness
Not grief --


Smile Awhile



Given the opportunity the student will be able to present his unique ideas and/or create new and different approaches to "old" ideas.


Be nice to a kid -
TODAY!


Happiness is learning
Something New!

SEARCHING
AND
SHARING

Developed by: Susan Sager

Concept/Competency

INDEPENDENT STUDY

Before we set out to do research, it is important to have an adequate Plan for Independent Study in which we list our topic, big question, little questions, sources of information, and reporting activities for presenting the results of our study.

LEVEL 3 - 6 TIME 4 30-min. periods

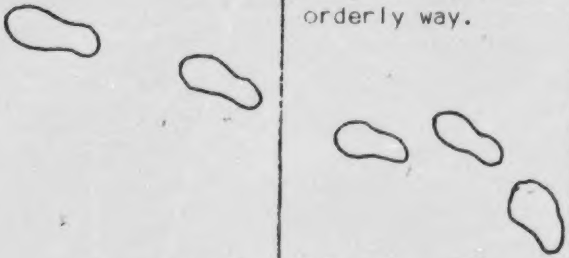
ENTRY CONCEPTS:	MATERIALS:
--experience in using the library to seek information --experience in giving short oral reports	Duplicated copies of the 5-page booklet, Searching and Sharing; Duplicated copies of the 2-page model, Plan for Independent Study; 12" x 18" sheets of oak tag for student folders; Chalkboard, chalk, writing paper, pencils

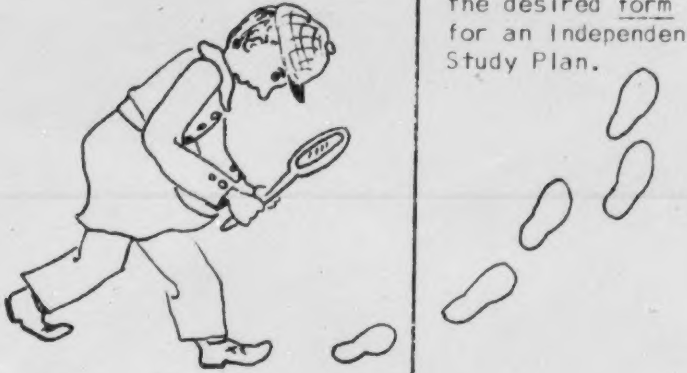
CREATIVITY

COGNITIVE:

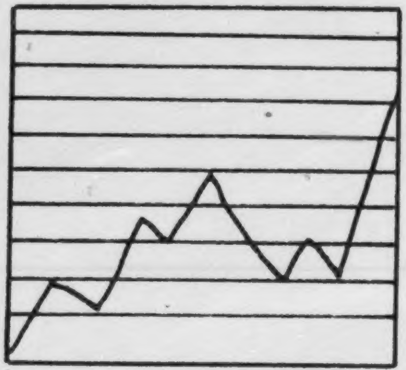
TEACHER TASKS:	STUDENT ENABLING BEHAVIORS: The student:	 In order to:	 LEARNINGS:
INTRODUCTION: Tell the students that you are going to introduce them to a five-page guide that will show them useful ways to search for information on a subject that interests them...and then share their findings with classmates in ways that they will enjoy.	listens	determine that	the purpose of the lesson is to show ways to search for information and share it with others.
LESSON DEVELOPMENT: 1. Distribute copies of the five-page booklet Searching and Sharing: A Guide to Independent Study.	observes	learn that	the name of the five-page guide is Searching and Sharing: A Guide to Independent Study.

Read aloud each page to the students, clarifying each point and allowing time for questions and answers. Explain that the numbers beside the words in the What and How columns on p.4 refer to the operational terms and product terms chosen for use in the sample reporting activities on p. 5.	listens, reads, questions	determine	how to understand and use the Guide.
Provide oak tag folders for the students for filing their guides and additional materials as their independent study progresses. These folders should be with them at all times while they are working on their independent studies.	accepts a folder	have	a place to store research materials in a neat and orderly way.
(Note: On p. 2, the Application level also includes Comprehension--or Translation, Interpretation, and Extrapolation.)			
At another session, distribute copies of the two-page model, Plan for Independent Study.	observes	learn that	the name of the two-page model plan is Plan for Independent Study.
Explain that this is how one person (a teacher) applied the instructions in Searching and Sharing to make an Independent Study Plan for a project of her own. Point out that this model demonstrates the desired form--but is more complex and detailed than most student plans would need to be.	listens	learn that	this model demonstrates the desired form for an Independent Study Plan.





Read aloud p. 1 of the Plan, clarifying each point and allowing time for questions and answers.	listens, reads, questions	determine	how to understand and use the model Plan.
Point out details of format: centered main title, left-blocked subtitles, spacing, underlining, bibliography form, etc.			
Read aloud p. 2 of the Plan. Lead the students to notice that the "what" operational terms and the "how" product terms are underlined in the reporting activities.	listens and reads	learn that	operational terms and product terms are underlined in the statements listing reporting activities.
Reread, one at a time, each little question from p. 1 followed by its corresponding reporting activity from p. 2. Stress the relationship between them.	listens and reads	notice that	each little question has its corresponding reporting activity.
Emphasize the importance of choosing a reporting activity--for sharing the answer to a little question--that is appropriate for presenting that particular kind of information. For example, a chronology is appropriate for presenting biographical facts. A chart is appropriate for presenting several categories of facts about several different individuals (for example, planets or presidents). And a graph is appropriate for presenting comparative figures from a survey.	listens	learn	the importance of choosing an appropriate method for sharing each different kind of informatio



3. Lead the students to analyze the structure of the statements used in the sample plans for reporting activities in both Searching and Sharing, p. 5, and the model Plan for Independent Study, p.2.	analyzes statements of reporting activities	isolate	the two-part structure of the statements.
Through careful scrutiny, they will notice that these statements have a two-part structure:			
(1) What:...	(Show)	(This)	
(2) How:...	by ______ing	(This)	
If the students still seem uncertain after being guided in analyzing the 10 sample statements, give additional samples on the chalkboard for more practice.	practices analyzing more samples	gain	skill in identifying the two-part structure of the statements.
When the students seem to have confidence in what they are doing, congratulate them for mastering a tough skill.			
4. Tell the students that they are now probably capable of putting together a good independent Study Plan for almost any topic in the world! In fact, they can even put together an Independent Study Plan for a "glimpit."	listens	learn that he/she now has	the ability to pu together a good Independent Study Plan for almost any topic in the world.
What is a "glimpit"? It can be anything they want it to be...because "glimpit" is a made-up nonsense word.	listens	learn that	it is even possible to put together an Independent Study Plan for a "glimpit."

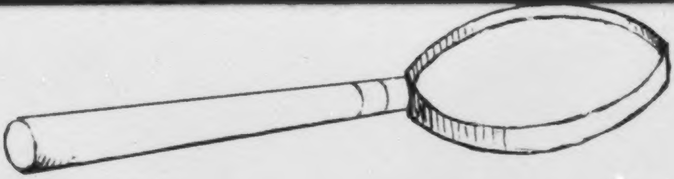
GLIMPIT HOUSE
?

Ask the students to decide privately what kind of thing a "glimpit" is. Then each one is to write the best, most interesting "mock" Independent Study Plan he/she can think of to guide him/her in researching and reporting on the "glimpit"--as if there really was such a thing!	imagines what a "glimpit" is	compose	an appropriate "mock" Independent Study Plan.

EVALUATION:

5. Have students exchange "mock" Independent Study Plans and evaluate them for form, sentence structure, clarity, variety, and originality.	shares "mock" plan	evaluate and be evaluated regarding	form, sentence structure, clarity variety, originality.
From the type of questions asked and reporting activities planned, ask each of the students to see if he/she can guess what kind of thing his/her partner's "glimpit" is. Have some of the funniest or most original plans read aloud to the group.	hypothesizes	guess	the nature of his/her partner's "glimpit."
With this background, students should be able to go forward confidently to write good "serious" Independent Study Plans.	acquires background and practice	synthesize	skills necessary for putting together "serious" Independent Study Plans.

Given instruction in using a 5-page guide,
Searching and Sharing, and a 2-page model,
Plan for Independent Study, the student
will develop and practice skills necessary
for producing his/her own well-organized
Independent Study Plan.



SEARCHING AND SHARING: A GUIDE TO INDEPENDENT STUDY

This booklet is designed to help you study on your own about something that is interesting to you. It will also help you to find different ways to share the results of your study with others.

To study is to search. Before you can begin to search efficiently, you must do two things:

1. Decide what topic you want to investigate.
2. State what you want to know in a big question.

Like a detective solving a crime, you must break this big question--which is usually hard to answer--into smaller parts... little questions that are easier to handle. The detective asks the

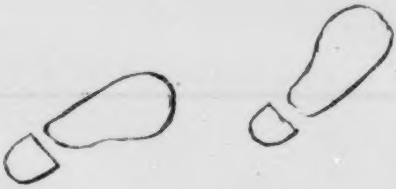
Big Question:

What is the solution to the crime?

But to find out, he must first find answers to the different parts of the puzzle--the

Little Questions:

Where was the crime committed?
When was it committed?
How was it committed?
Who was the victim?
Who was there at the time?
Who were the enemies?
What are the clues at the scene of the crime?



When you know what your big question is--and have decided which little questions will help you to answer it--you are ready to go ahead with your search or study. On the next page you will find an example of a big question and some little questions which could help in answering it.

Getting Ready to Search

Topic: Horses

Big Question:

What is interesting or important to know about horses?

Little Questions:

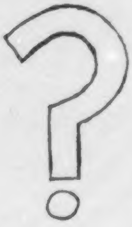
1. What kinds of horses are there?
2. How are horses related to other animals?
3. What are the parts of a horse?
4. What could be added to the design of a horse to improve it?
5. Which kind of horse is most important, and why?

Of course, these are not all of the little questions that would be helpful in answering the big question. We might ask:

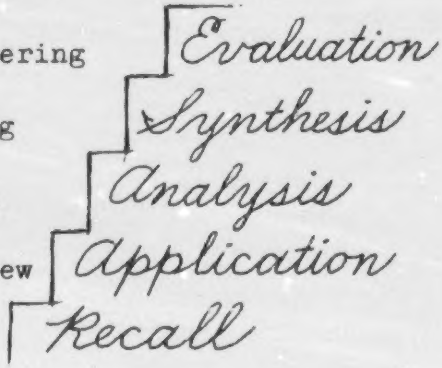
What are the different ways horses are used?
How are horses classified into breeds?
How do horses of today compare with horses of long ago?
How has the automobile affected the horse?
Is the horse more important in some countries
than it is in others--and why?

However, it is probably better to do a good job of answering five questions than to get quick answers for many questions. So let's go with just five this time.

Incidentally, these questions--with the activities chosen to answer them--are arranged from lower to higher levels in the kinds of thinking required to deal with them:



1. Recall - Finding out and remembering (data level)
2. Application - Understanding and using (transfer-of-learning level)
3. Analysis - Taking apart the known (formal reasoning level)
4. Synthesis - Putting together the new (creativity level)
5. Evaluation - Judging the outcome (valuing level)



This is a good way to organize your study if you can. But it takes experience to write questions and plan activities at different levels. So don't be concerned if you aren't able to do it this way immediately.

Searching for Answers

Now that you have the questions you want to ask, where can you go to get the help you need in finding answers? Often, of course, you have to look in books for help. Sometimes it is possible, and much more fun, to search for information in other ways, such as by interviewing people who know a great deal about a particular subject--or even by making an investigation on your own.

For example, possible information sources for the horse project might look like this:

Information Sources:

1. Your personal memory of what you have observed
2. Your personal examination of a horse
3. Interviews with horse breeders and horse owners
4. Interview with a veterinarian for large animals
5. Films and filmstrips
6. Study prints of horses
7. Statues or models of horses
8. Printed materials: encyclopedias, books, magazines

There are certainly other sources which could be used to get information for the study. These are only examples.

So...you now have questions to answer and an idea of where and how to search for answers. Of course, you will want something to show when you have finished so that you and your teacher can make a judgment about what you have done and plan what might come next--and so that your classmates can also benefit from what you have learned. Usually, that "something" is a written report, and that is fine, but it can become very boring after a while. May we suggest that you skip the report and try the Mix and Match system which is described on the next page?

Mix and Match

The first list of words below gives suggestions of what you can do. The second list suggests how you might do it. The trick is to use a wide variety of choices from each list (operations/products). So let's mix and match a way to report information searched out about each of the five questions about horses. Look on the next page to see how the mix and match turns out.

What

adapt
#4 add to
#3 analyze
apply
change
#5 choose
classify
#3 compare
contrast
create
criticize
decide
#2 demonstrate
#1 describe
design
discover
#2 explain
group
identify
imagine
#4 improve
invent
judge
#5 justify
list
match
#1 name
observe
organize
predict
prove
put in order
report
represent
select
show
solve
suppose (what if...)
take apart
teach
etc.

How

#2 chart
chronology
collection
comic strip
construction
diagram
diorama
discussion
editorial
essay
experiment
fact file
film
game
graph
journal
learning center
lesson
map
mobile
#4 model
museum
newspaper
peepshow
#1 picture
plan
#5 play
poem
problem
puppet
record
scrapbook
song
statement
story
survey
textbook
time line
travelogue
#3 work sheet
etc.

Planning Your Activities

Little Questions

1. What kinds of horses are there?
2. How are horses related to other animals?
3. What are the parts of a horse?
4. What could be added to the design of a horse to improve it?
5. Which kind of horse is the most important, and why?

Reporting Method (Mix and Match)

1. Name and describe the general types of horses by drawing a picture.
2. Demonstrate and explain how horses are related to other animals by making a chart.
3. Analyze the parts of a horse and compare them to the parts of an automobile by making a work sheet.
4. Add something to improve the design of a horse by making a model, using any available material.
5. Choose the most important kind of horse and justify your choice by writing a play.

At this point there is nothing left to do except gather all of the information available and organize it into the mix and match activities you have planned!

Guide adapted from
one widely used
in G/T programs
around the Valley
(original source unknown)

Revised 1/77

S. Sager

Susan H. Sager　　　　　　　　　　　　　　　　March 2, 1977

Plan for Independent Study

Topic: Helen Keller

Big Question: What is interesting or important to know about the early life of Helen Keller, especially during her first few months with her teacher, Annie Sullivan?

Little Questions:

1. What are the important facts about Helen Keller's early life?
2. What methods might be used to communicate with and teach a deaf-blind person?
3. How do signing, finger spelling, and braille differ from one another?
4. How might Helen's changing feelings--as she moved from isolation to communication--be represented in visual images and in words?
5. Why is the ability to use language probably the single most important difference between man and beast?

Bibliography

1. *Book of Knowledge* (1972), X, 201.
2. Davidson, Mickie. *Helen Keller's Teacher*. New York, 1965.
3. Gibson, William. *The Miracle Worker*. New York, 1956.
4. Keller, Helen. *The Story of My Life*. New York, 1902.
5. *World Book* (1976), XI, 209-210.

Reporting Method: Plan of Activities to Use for Sharing Answers to Little Questions (*)

1. List the important dates and events in Helen Keller's early life by making a chronology.

2. Demonstrate methods used to communicate with deaf-blind persons by teaching a lesson to a student wearing a blindfold and sound-suppressing earphones.

3. Compare signing, the manual alphabet, and braille by making an illustrated chart.

4. Represent Helen's changing feelings--

    a) in visual images,

    by making a series of paintings.

    (Color changes from dull, grayed tones to bright, clear colors.

    Brushwork changes from a "closed" stiff, hard-edge style to "open" loose, free brush strokes.)

    b) in words,

    by selecting a series of expressive quotations from Helen Keller's autobiography and William Gibson's play The Miracle Worker.

    (Feelings expressed change from grief and frustration at being isolated to joy and confidence in being able to communicate.)

5. Justify the belief that language is what makes human beings human by presenting a round table discussion.

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(*) Note:

Each reporting activity grows out of its own little question! Reporting activity (1) goes with little question (1), etc., etc.

Psychomotor

Man or Beast

Developed by: Betty Suzuki

Concept/Competency

AUDITORY THINKING ACTIVITIES

Listening is a mode of obtaining information which is subsequently categorized.

LEVEL 4 - 6 TIME 30 minutes

PSYCHOMOTOR: PHYSICAL EFFECTIVENESS

ENTRY CONCEPTS:

--Ability to listen

MATERIALS:

A dictionary
A list of synonyms for "Groups"

TEACHER TASKS:

INTRODUCTION:
The teacher will announce a game called "Man or Beast". Divide the class into two teams then give the following instructions.

LESSON DEVELOPMENT:

1. Say: "Beast includes everything other than man. The most commonly associated usage of the term should be selected."

   (The pupil categorizes the assigned word under "Man" or "Beast" and uses the word in a sentence/phrase. EXAMPLE: litter - a litter of kittens.)

   The team that correctly categorizes the most terms, wins.

STUDENT

ENABLING BEHAVIORS: The student:	In order to:	LEARNINGS:
listens	analyze/ classify	according to characteristics of word and usage.

List of Synonyms

- class
- drove
- swarm
- gaggle
- covey
- bevy
- school
- tribe
- regiment
- crew
- committee
- pride
- squadron
- congregation
- mob
- crowd
- audience
- litter
- rabble
- posse

EVALUATION:

The student will see how many new synonyms can be applied to each category.

Can you give a reason why there are different names for different groups?

Listening to the sound, does the word seem appropriate for the group it describes?

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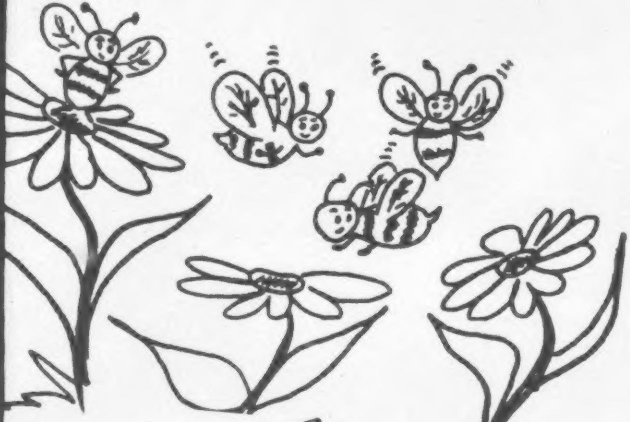
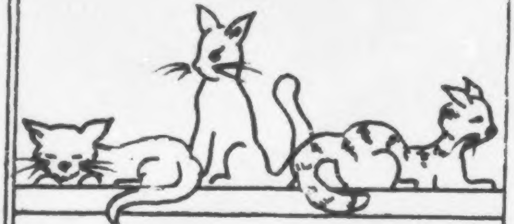


listens	analyze/ classify	according to characteristics of word and usage.
chooses	expand	usage of terminology.
evaluates	select	appropriate definition.



Given the opportunity to work with terminology, the student will categorize them.

CALIGRAPHY

Developed by: Betty Suzuki

Concept/Competency

GRAPHIC THINKING ACTIVITIES

Caligraphy is the art of Japanese writing.

LEVEL 3 - 6 TIME *45 minutes*

PSYCHOMOTOR: PHYSICAL EFFECTIVENESS

ENTRY CONCEPTS:

--Ability to read words such as tree, forest, river, man

MATERIALS:

Pencils or brushes and India ink;
Ditto hand-out

TEACHER TASKS:

INTRODUCTION:

The teacher will explain that caligraphy in Japan is considered an art and a revelation of one's character.

She/he will also explain that the characters often represent physical characteristics of the word.

The characters must be written from left to right.

STUDENT

ENABLING BEHAVIORS:		LEARNINGS:
The student:	*In order to:*	
listens	understand	directions.

Caligraphy

LESSON DEVELOPMENT:

1. Using the ditto hand-out, the teacher will guide the class in class discussion.	observes	identify	physical attributes of characters.
	analyzes and combines	synthesize	logical development of characters.
2. Hand out sheets, brushes, and ink to students and have them write characters.	experiments	appreciate	the precise nature of the art of caligraphy.
3. Write a short story using the characters.	synthesizes	produce	a creative story to develop ownership and a working knowledge of the characters.

EVALUATION:

The student will discuss the characters and appraise the value of this type of writing. The student will attempt to surmise the reasons for the development of this method of writing.

The students will share their stories with one another.

Given the opportunity to experience caligraphy, the student will develop an appreciation of the art of writing in Japan.

Caligraphy

一	one
二	two
三	three
四	four
五	five
六	six
七	seven
八	eight
九	nine
十	ten
十一	eleven
十二	twelve
十三	thirteen

人	person
一人	1 person
二人	two people
三人	three people

門	gate
間	between
上	up
下	down
心	heart
思	think
日	day
時	time
目	eye
見	saw

木	tree
森	forest
山	mountain
川	river
口	mouth
言	said
中	inside
耳	ear
聞	hear

MAGIC

Movements

Developed by: Carole Draper

Concept/Competency

PHYSICAL EFFECTIVENESS
Techniques of Relaxation

Relaxation can develop through concentration, physical movement, sensory awareness, and fantasy.

LEVEL K - 6 TIME *Several days to cover all areas*

PHYSICAL EFFECTIVENESS

ENTRY CONCEPTS:

--The ability to listen and follow directions

MATERIALS:

Tape recorder; chair, desk;
Dark sock with various small items in it such as comb, scissors, wrench, cup, screwdriver, pencil, ball, etc.: Geometric design or shape; foods such as orange, banana, cracker, etc.;

TEACHER TASKS:

STUDENT

ENABLING BEHAVIORS:

The student: *In order to:*

LEARNINGS:

PSYCHOMOTOR:

INTRODUCTION:

Relaxation is practice in concentration. There are four basic forms of relaxation--
- sensory awareness
- physical movement
- concentration
- guided fantasy.

The teacher will instruct the child in each area.

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LESSON DEVELOPMENT:

1. "Sensory awareness" involves activities in the areas of listening, feeling, seeing, and tasting.

A. (1) Ask the students to be very quiet for 5 minutes while they write down what sounds they hear (inside the room, outside the room, tape recording, etc.)	listens writes	hear	specific sounds.
(2) Have the students discuss and compare their lists.	discusses compares	verbalize and summarize	the lists of sounds heard.
B. (1) The teacher will fill a dark-colored sock with various items. Ask the students to feel the different items and decide what they are. OR....	touches decides feels examines	distinguish and identify	specific objects.
(2) The teacher can ask the students to feel and touch their desks and chairs. Then have them express orally their findings.	feels touches	discuss, verbalize, be conscious of	their tactile feelings about common, everyday items.
C. The teacher will ask the students to describe (orally or in written form) a simple object they come across every day but take for granted, such as their bed, their favorite chair, the T.V., etc.	describes summarizes verbalizes sees	conceptualize	a specific common, everyday item.
D. The teacher will make available various kinds of foods or drinks, such as carrots, bread, crackers, cake, jello, lemon, cucumber, tea, coffee, pop, water, orange juice, etc., for the students to taste. The student will attempt to distinguish between the items when blindfolded.	tastes smells tests analyzes	determine, compare, distinguish, differentiate	various foods or drinks.

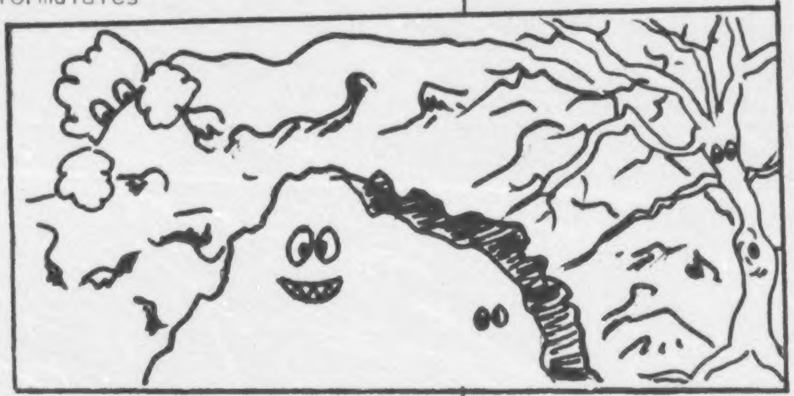
2. To develop the area of "physical movement" the teacher will ask the students to raise their hands slowly above their heads, to lower their hands slowly to their sides, to slowly raise their right arm out straight to their side, to slowly raise their left arm out straight to their side, etc.	moves	demonstrate	certain body movements.
3. To develop the area of "concentration" the teacher will have the students focus on a geometric design such as an octogon, breathing gently and trying to release all thoughts.	studies looks watches	develop	concentration.
4. In the area of "guided fantasy' the teacher will set the scene where the students involve themselves in imagination. Example: The teacher asks the students to imagine they are standing near a cave on the side of a mountain. Now you walk near the cave. Go in and explore it.	imagines describes elaborates formulates	develop	a fantasy situation,

EVALUATION:

The teacher will ask the students such questions as:

--How did you feel when asked to describe a familiar object?
--How did your body feel when you were moving about slowly?
--How did your mind feel when you were concentrating on one object?
--Did you like these activities?
--Did you learn something from these activities? What?

The teacher may have many more questions which she can ask the children.



The student will become a more relaxed, calm individual with a stronger feeling of self-worth.

BEAT OF THE DRUM

Developed by: Betty Suzuki

Concept/Competency

SELF-EXPRESSION THROUGH MOVEMENT

The limbs of a human body are capable of moving independently or as a unit.

LEVEL K - 4 *TIME* *20 minutes*

PHYSICAL EFFECTIVENESS

ENTRY CONCEPTS:

--Ability to visualize numerals 1 - 10

MATERIALS:

Drum
Large area - gymnasium or multi-purpose room

TEACHER TASKS:

STUDENT

PSYCHOMOTOR:

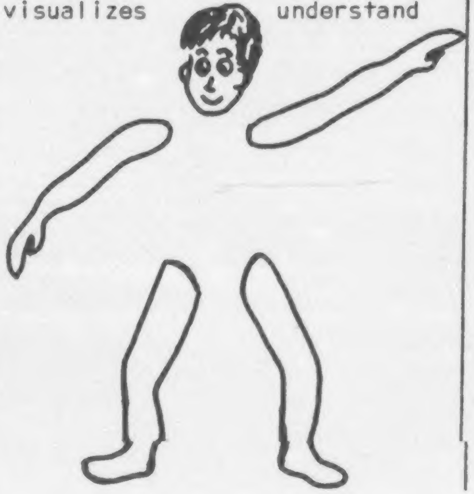
INTRODUCTION:

The teacher will discuss the limbs and evoke awareness of the mobility of limbs and the head.

LESSON DEVELOPMENT:

Have students carry out tasks verbalized by instructor.

ENABLING BEHAVIORS:		*LEARNINGS:*
The student:	*In order to:*	
visualizes	understand	the physical connection of appendages to the body.



Beat of the Drum

1. Move your body in time to the beat of the drum. (Change rhythm and observe how quickly the student adjusts.)	listens	perform	body movements in time to a definite beat.
2. Change your movement by moving your feet in a way that is different.	improvises	create	various possible movements of limbs.
Move your arms in a manner different than that done in the two previous exercises.			
3. Choose a movement that someone else was performing that you would like to do.	observes	duplicate	a model that was previously observed.
Move your head in a way that is unusual.	experiments	discover	the head movement greatly affects the mobility of the remainder of the body.
Variation - Show you are happy, sad, angry.			
4. Divide the class in groups of two's or three's. Assign a numeral to each group. The group must relate to the class the numeral assigned by some physical means.	moves body	express	numeral through group process.

EVALUATION:

The students will identify the numeral that the group is trying to communicate.

--What were some of the clues that helped them to identify the numeral?

--What new limb movements have you discovered?

The child will gain an appreciation of the movements possible by each limb and will learn how communication is possible through body movements.

Concept/Competency

Concentration-Español

MIND-BODY INTEGRATION ACTIVITIES

One's mind must concentrate when a precise physical routine is being executed.

Developed by: Betty Suzuki

LEVEL 4 - 6 TIME 20 minutes

PHYSICAL EFFECTIVENESS

PSYCHOMOTOR:

ENTRY CONCEPTS:

Student is familiar with counting in Spanish.

MATERIALS:

TEACHER TASKS:

INTRODUCTION:

The teacher will tell the students they are going to play a game. Have the students form a circle then, go through the cardinal numbers in Spanish, up to the number of students in the class.

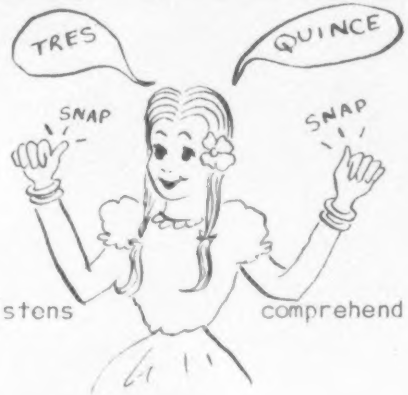
LESSON DEVELOPMENT:

1. Familiarize students with rules:

   You must call out numbers in rhythm. A student who makes an error goes to the highest number. The student next to "it" takes his place and those with higher numbers move one seat closer to "Numero Uno."

STUDENT

ENABLING BEHAVIORS: The student:	In order to:	LEARNINGS:
listens	comprehend	rules.



Rhythm and motion:
slap knees = beat 1
clap hands = beat 2
snap right fingers = beat 3
snap left fingers = beat 4

On beat of 3, verbalize your own number.

On beat 4, verbalize number of person you wish to call on.

The person whose number was called on the fourth beat calls out the number in the next rhythm sequence. The person in seat #1 initiates activity. Sequence continues until allocated time expires or inability of the group to "dischair" Number 1.

EVALUATION:

Ask students, "Compare how well you did at the beginning with the end."
"What made the difference?"

Determine the skill needed to concentrate and remain in the beginning seats #1, 2, 3, by asking: "Who was most able to stay in seat #1?"
"Would you tell us what skill you used?"

listens	respond	to specific rhythm and sequence.
anticipates	translate	instructions into actual play.

uno	one	trece	thirteen
dos	two	catorce	fourteen
tres	three	quince	fifteen
cuatro	four	dieciseis	sixteen
cinco	five	diecisiete	seventeen
seis	six	dieciocho	eighteen
siete	seven	diecinueve	nineteen
ocho	eight	veinte	twenty
nueve	nine	veintiuno	twenty-one
diez	ten	veintidos	twenty-two
once	eleven		
doce	twelve		

Given the opportunity to do this exercise, the student will be able to concentrate in a "pressure" situation and gain mastery of counting in Spanish.

365

PARTIAL LIST OF THINKING GAMES AND ACTIVITIES

Here is a partial listing of games and activities which are useful for encouraging positive feeling, good thinking and active doing. Each game is labeled with a partial trigram to indicate what content and product is stressed. (See Guilford and Meeker.)

FIGURAL CONTENT

Geometrix Puzzles:

FT Pythagoras (Square/ Tangrams)
FT Puzzle Grams (Rectangle)
FT Euclid (Octagon)
FT Tormentor (Heart)
FT Kwazy Quilt (Free Form)
FT Soma Cube (Incomplete Tetraminoes)
FT Rainbow Blocks (Tetraminoes)
FT Hexed (Pentaminoes)
FT Tangled Angles (Hexaminoes)

Domino - Type Games:

FR Classic Dominoes
FR Hi-Q Dominoes Puzzle
FR Tri-Ominos
FR Drag-Ominos
FR Connect
FR Psychepaths
FR Twixt
FR Hex
FR Bridgit
FR Qwik-Sane

Array/Coordinate Problems:

FR Hi-Q
FR Switch
FR Three-Dimensional Tic Tac Toe
FR Tac-Tickle
FR Score Four
FR Go (Five in a Row)
FR Battleship
FR Memory Game (Concentration)
Atlases, Maps and Globes
Geo-boards
Graph Paper

Construction:

FS Geo-D-Stix
FS Constructo-Straws
FS Erector Sets
FS 1,000 wooden cubes
FS Lego
FS Connector
FS The Toy Maker
FS Geodesic Fantasy
FS Flexagons
FS String Figures and How To Make Them (Book)
Rulers, Protractors, Compasses, Scissors, Glue

Pattern and Design:

FS Pattern Pending Blocks
FS Design Blocks and Mirrors
FS Mosaic Parquetry Tiles
FS Puzzle Patterns - Dots, Lines, Shapes
FS Haar Houlim Perception Games
FS Configurations

Shape Recognition:

FU Scan
FU Perfection
FU Superfection

PARTIAL LIST OF THINKING GAMES AND ACTIVITIES (Cont'd)

SYMBOLIC CONTENT

Arithmetical Games:

SI	Tuf
SI	Krypto
SI	Numble
SI	Heads Up
SI	Mancala
SI	Cuisenaire Rods
SI	Aggravation
SI	Sorry
SI	Yahtzee
SI	Equations
SI	Real Numbers
SI	On-Sets
SI	Kismet
SS	Numbers Up
SR	Twenty Questions (Numbers)
SI	"Magic Square" - Type Games
	Pocket Calculators

Alphabetical Games:

SS	Spill 'n' Spell
ST	Anagrams
ST	Scoring Anagrams
SS	Scrabble
SS	Scrabble for Juniors
SS	Crossword Dominoes
SS	Probe
SS	Hangman
SS	Perquacky
SS	Duplicate Ad-Lib
SS	Boggle
SS	Keep Quiet
SS	Word Mastermind
	Dictionaries (Spelling)

Logic Games

SI	Mastermind
SI	Tri-Nim
SI	WFF'n Proof
SI	Clue
SI	Whosit?
SI	Bridge (Card Game)

SEMANTIC CONTENT

MU	Wordcraft Puzzles
MS	Sentence Cube Game
MU	Guiness Game of World Records
MI	Propaganda Game
MI	The Un-Game
MI	On-Words
MI	Queries 'n' Theories
MS	Twenty Questions (Animal, Vegetable, Mineral)
MI	Point of Law
	Dictionaries (Definitions/Etymology)
	Almanacs
	Encyclopedias

RECREATION: STRATEGY GAMES

FI	Checkers
FI	Chess
FI	Othello
FI	Stratego
FI	Tripples
FI	Backgammon
SI	Monopoly
FI	Risk
FI	Chinese Checkers
FI	Parcheesi
FI	Roadblock
FI	Q-Bits
MI	Careers
SI	Life
SI	Anti-Monopoly
MI	Stay Alive
FI	Feudal

Kaleidoscopic Symmetry

Developed by: Betty Suzuki

Concept/Competency

RECREATIONAL INTEGRATIVE ACTIVITIES
Arts and Crafts

There is correspondence in size, shape, and relative position of parts on opposite sides of a dividing line of a ray segment.

LEVEL 1 - 3 TIME 30 - 40 minutes

PSYCHOMOTOR: PHYSICAL EFFECTIVENESS

ENTRY CONCEPTS:

---The ability to comprehend the concept of bilateral symmetry.

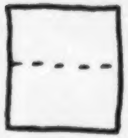
---The ability to differentiate sizes and shapes

MATERIALS:

Several Kaleidoscopes
8½ x 11 drawing paper
Crayons

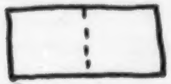
TEACHER TASKS:	STUDENT ENABLING BEHAVIORS: *The student:*	 *In order to:*	 LEARNINGS:
INTRODUCTION: Ask the students if they know how to tear a circle without using a pattern or a pair of scissors. Have students share ideas.	discusses	compare	ideas.
LESSON DEVELOPMENT: 1. The teacher will instruct students on how to form a circle by folding and tearing paper.	listens	interpret and produce	precise directions.

Step 1.



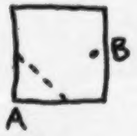
fold in ½

Step 2.



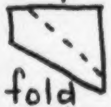
fold in ½ again

Step 3.



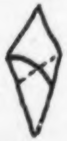
Bring A to point B

Step 4.



fold in ½

Step 5.

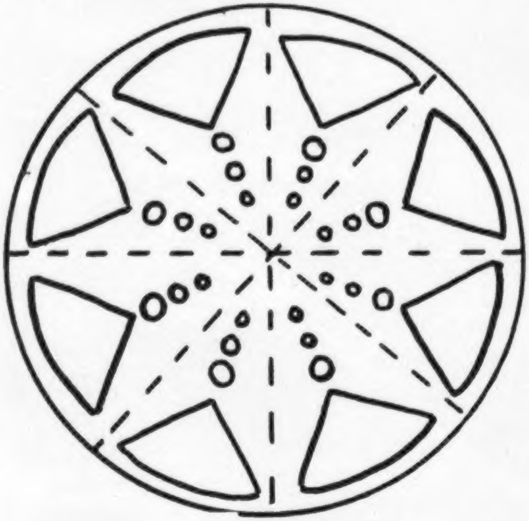


tear ----

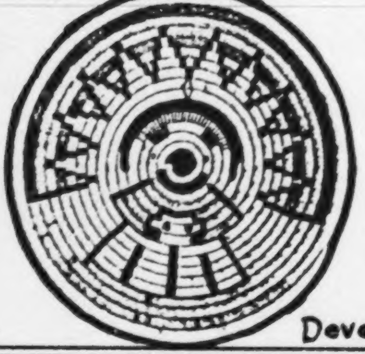
Fold paper so segments are distinct on paper and creases serve as boundaries.	constructs	apply	knowledge gained from bilateral symmetry and apply to segments.
After Step 5, the student has a circle with clearly marked segments.			
2. Using a Kaleidoscope as a means of motivation, have the student examine the segments and note the symmetry.	perceives	discern	patterns.
3. The student then is instructed to create patterns in each segment.	draws	create	original designs in segments.
It is important that the student understand that each segment must be an exact duplicate of the first segment in which the designs originated.	surveys	evaluate	whether each design adds or detracts from the whole pattern.

EVALUATION:

The student will examine each segment to note whether there is exact duplication in each one.



Given the opportunity to construct a repeated pattern, the student will understand the building of a whole by parts and the significance of exact duplication in the construction of symmetry.



American Indian Dances

Concept/Competency

SPECIAL PROJECTS IN ART, DANCE, DRAMA, MUSIC

There are five different steps used in many American Indian tribal dances.

Developed by: Betty Suzuki and Nonda Chomokos LEVEL K - 6 TIME 20 - 30 min.

PSYCHOMOTOR: RECREATIONAL ACTIVITIES

ENTRY CONCEPTS:
--Ability to bend, skip, hop, jump, turn, walk, (correct form), twist

MATERIALS:
Tom-tom
Description of dance steps

TEACHER TASKS:	STUDENT ENABLING BEHAVIORS: *The student:*	STUDENT ENABLING BEHAVIORS: *In order to:*	STUDENT LEARNINGS:
INTRODUCTION: The teacher will relate the following information: "Dance is an important part of native American life. Dances were done in preparation for war, celebrations, and religious ceremonies. Many different types of steps are used. Body positions should be exaggerated with much bending, twisting, turning, and grotesque movements. Arms generally dangle."	listens	understand	place dancing holds in Native American life.

LESSON DEVELOPMENT:

Proceed then to demonstrate and teach the various steps:

1. The Shuffle - This is a light one-count movement where the pressure is on the balls of the feet, with the feet dragging on the floor. The dancers shuffle forward, backward, turn around, move in various directions.	experiments	comprehend	the moving of th shuffling feet i different direct
2. The Toe-Heel Step - This is a two-count movement which is done from a crouched position at moderate rhythm. On the first part of the step the foot comes down on the toes with the heel kept high in the air. On the second count, the heel is dropped to the ground.	moves	accomplish	the toe-heel movement in a crouched positio
3. The Heel-Toe Step - This step is similar to the toe-heel, except that the weight first is on the heel (count 1), and then the toe is brought down (count 2).	executes	master	intricate heel-t movement.
4. The Three-in-One Step - Four counts are needed to complete this step. With the weight completely on the left foot, the right toe is touched out to the side (count 1), moved forward (count 2), and further forward (count 3). Each of these are taps with no weight placed on the tapping foot. On the fourth count, a step forward is taken with the right foot. The weight is now on the right foot, and the step is repeated with the left foot. The cut is "tap, tap, tap, step."	imitates	react to	a definite rhythmic patter

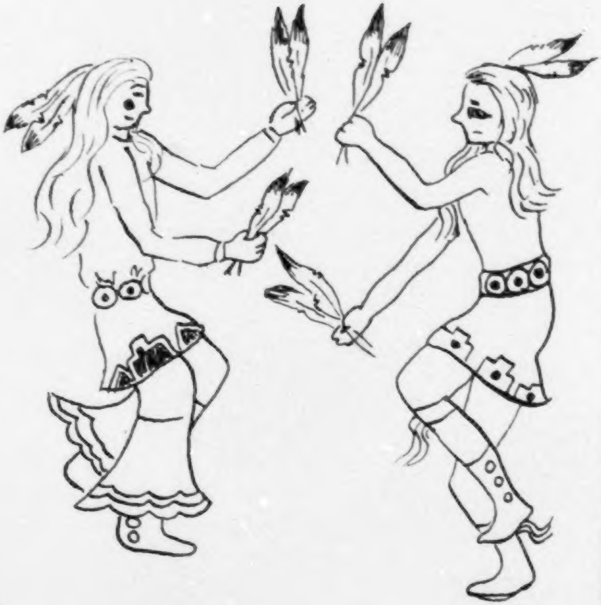
5. The War Dance - The War Dance is done to a fast beat and can be either a fast step-hop or a double bounce. The latter is in the nature of two flat-footed bounces on each foot alternating. It is fast and vigorous and accompanied with exaggerated body movements. Extreme facial contortions are a part of the war dance.

responds	express	emotion and anticipation of the imminent event.

EVALUATION:

The student will determine which steps were difficult and which steps were easy.

The students will discuss the meaning of dances in Native American culture and compare the place of dance in their culture.



Given the opportunity to learn five special Indian dance steps the student will learn to respond and develop a sense of rhythm. She/he will move rhythmically to the music.

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BLEKING

Developed by: Nonda Chomokos + Betty Suzuki

Concept/Competency

SPECIAL PROJECTS IN ART, DANCE,
DRAMA AND MUSIC

The body can be used as a source of creative expression.

LEVEL 3 - 6 TIME *20-30 minutes*

RECREATIONAL ACTIVITIES

ENTRY CONCEPTS:

--Ability to draw steps, slide, skip, hop

MATERIALS:

Record: Victor 45-6169, 20989,
Folkraft 1188

TEACHER TASKS:

STUDENT

PSYCHOMOTOR:

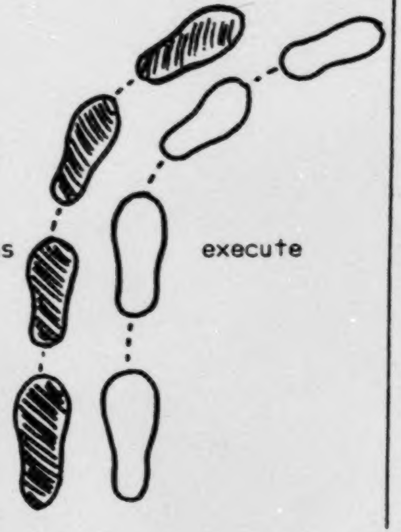
INTRODUCTION:

"We will work on Bleking, which is a Swedish dance step. After mastery is gained, you may use it for creative experimentation."

LESSON DEVELOPMENT:

1. Measures:
   1. Hop on left foot and extend right heel forward with the right leg straight. At the same time, thrust the right hand forward. Hop on the right foot, reversing arm action and extending the left foot to rest on the heel.
   2. Repeat the action with three quick changes - left, right, left.

ENABLING BEHAVIORS: The student:	In order to:	LEARNINGS:
listens	execute	specific arm and feet movements.



3. & 4. Beginning on the right foot, repeat the movements of measures 1 and 2.

5. & 8. Repeat measures 1 - 4.

Cue by calling: "slow-slow, fast, fast, fast."

II. The student may do any locomotor activity they wish. The basic Bleking rhythm of "slow-slow; fast, fast, fast," must be maintained.	synthesizes	create	new locomotor executions.
	analyzes	demonstrate	understanding of fast time and slow time.

EVALUATION:

How many different movements and gestures can be created using the Bleking rhythm?

Given the opportunity to demonstrate the Bleking step, the student will be able to use his/her body for creative expression.

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Concept/Competency

SPECIAL PROJECTS IN ART,
DANCE, DRAMA AND MUSIC

Ability to control movements, execute light step-hops and maintain balance control.

7-Jumps

Developed by: Nonda Chomokos and Betty Suzuki

LEVEL K - 6 TIME 45 minutes

PSYCHOMOTOR: RECREATIONAL ACTIVITIES

ENTRY CONCEPTS:	MATERIALS:
--Ability to stop, pivot, skip, turn, balance	Record: Methodist M-108, Victor 45-6172, Victor 21617

TEACHER TASKS:	STUDENT ENABLING BEHAVIORS: *The student:*	 *In order to:*	 LEARNINGS:
INTRODUCTION: Say: "Today we are working on rhythm. Let's see how good a listener you are. Form a circle. Watch your spacing by watching the persons in front and back of you. Watch your rhythm - there will be changes within the record.	listens	determine	procedures to be used in the activity.
LESSON DEVELOPMENT: 1. Have teacher share the following information: "This dance was used by Danish men. Those who made unnecessary movements or mistakes were taken out of the dance."	listens	respond	in time to the rhythm.

Stress good control and reaction to rhythmic changes during the different jumps.

2. The teacher proceeds to directions and description of dance in accordance to the hand-out that comes with the record.

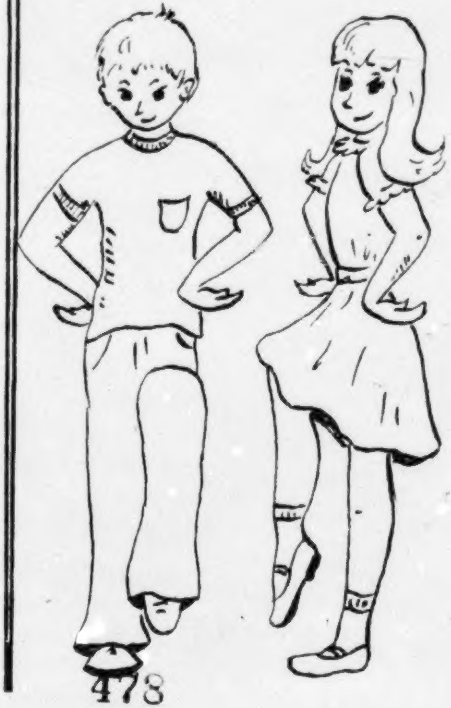
These are:

Formation: Single circle with hands joined.
There are seven jumps to the dance.
Each jump is preceded by the following:

Measures	Action
1 - 8	The circle moves to the right with seven step-hops, one to each measure. On the eighth measure, all jump high in the air and reverse direction.
9 - 16	Circle to the left with seven step-hops. Stop on measure 16 and face the center.
First Jump	
17	All drop hands, place them on hips, and lift the right knee upward, toe pointed downward.
18	Stamp right foot to the ground on the first note and join hands on the second note.
Second Jump	
1 - 18	Repeat measures 1 - 18, except do not join hands.
19	Lift left knee, stamp, and join hands.
Third Jump	
1 - 19	Repeat measures 1 - 19. Do not join hands.
20	Put right toe backward and kneel on right knee. Stand, join hands.

listens — respond to — specific directions for execution.

counts and pivots — demonstrate — understanding of concept of clockwise and counter-clockwise.



Seven-Jumps

Measures	Action			
Fourth Jump				
1 - 20	Repeat measures 1 - 20. Do not join hands.			
21	Kneel on left knee. Stand, join hands.			
Fifth Jump				
1 - 21	Repeat measures 1 - 21. Do not join hands.	listens	evaluate	the preciseness of his/her reactions.
22	Put right elbow to floor with cheek on fist. Stand, join hands.			
Sixth Jump				
1 - 22	Repeat measures 1 - 22. Do not join hands.			
23	Put left elbow to floor with cheek on fist. Stand, join hands.			
Seventh Jump				
24	Repeat measures 1 - 23. Do not join hands. Forehead on floor. Stand, join hands.	executes	evaluate	the mobility and self-control of his/her limbs.
Finale				
1 - 16	Repeat measures 1 - 16.			

EVALUATION:

The students will determine which movement is the most difficult.
The students will discuss how the dance can be better executed by the class as a whole.

Given the opportunity to perform in a group, the students will appreciate the concentration and body control necessary for perfect execution by the entire class.

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APPENDIX I

HUMAN INDIVIDUAL POTENTIALITIES: AN INNOVATIVE PROGRAM FOR THE TALENTED AND GIFTED

BY

STANLEY R. WURSTER, ED.D.
ARIZONA STATE UNIVERSITY

AND

KLONDA M. BALL
PROJECT COORDINATOR

TEMPE, ARIZONA
JULY, 1976

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HUMAN INDIVIDUAL POTENTIALITIES: AN INNOVATIVE PROGRAM FOR THE TALENTED AND GIFTED

SECTION I

INTRODUCTION

Every human being is unique and constantly changing. Every child seemingly has potential talent of some degree and kind. Each individual's contribution to society and his own personal satisfaction lies in his uniqueness and the extent to which he chooses to use his uniqueness, or talents, to contribute to societal and personal needs. Educators have been given the task of recognizing and then developing those traits and abilities that are unique within the individual so that the individual can utilize them for personal improvement and the benefit of others.

Arizona has responded to the special educational needs of the children in the state by enacting legislation designed to effect rather sweeping changes in special education programs by 1976. However, educational programs for gifted children have been overlooked or neglected in said legislation. Financial support for gifted programs in Arizona is far from adequate. Also, model programs for gifted and talented children are seriously needed to provide direction for others who recognize the special needs of this group of children and want to foster this natural resource, the uniquely gifted and talented.

The Kyrene School District has been aware for sometime of the unique potentialities possessed by individuals - - talents and gifts. They have also recognized the need to assist individuals in recognizing, appreciating, and developing their uniqueness. In addition, the Kyrene School District realized that model programs were needed to aid in this endeavor.

In pursuing this challenge the Kyrene School District, with the help of an ESEA Title III grant, sought to plan, develop, and implement an innovative program for talented and gifted children. This report summarizes the results of these efforts during the two years the program has been in existence: 1974-1976.

GOALS AND OBJECTIVES

The basic purpose of this Title III project was to develop and implement an exemplary model for identified talented and gifted students in the Kyrene School District, K-8, which would be applicable in other school systems in Arizona and throughout the country.

The project, in pursuing the above goal, sought to achieve the following specific objectives:

1. By June 30, 1975, criteria for the identification of gifted and talented students will have been developed, and an exemplar program and basic curriculum guidelines will have been formulated for the development of individual uniqueness in identified gifted and talented children.
2. By May 30, 1976, curriculum which specifies the experiences and activities implemented with the gifted and talented children will be developed.
3. By May 30, 1976, students identified as gifted or talented and participating in a pilot program will show an improvement in high-level cognitive thinking as measured by pre-post test results of cognitive thinking measures.
4. By May 30, 1976, identified students participating in a pilot program will show an improvement in creativity as measured by pre-post test results of creativity measures.
5. By May 30, 1976, identified students participating in a pilot program will show an improvement in school attitude as measured by pre-post test results of a school sentiment measure.
6. By May 30, 1976, identified students participating in a pilot program will show an improvement in self-concept as measured by pre-post test results of a self-concept measure.
7. By May 30, 1976, the participating students in a pilot program will show a positive change in their personality profile as measured by pre-post test results of a personality test.

SECTION II

PROGRAM DESCRIPTION

In pursuing the objectives established, both standardized and non-standardized tests were administered; responses to interest, attitude, and personality inventories were collected; socio-grams, checklists, peer and self-nominating forms were included with those from parents and teachers. The data was analyzed with two questions in mind: (1) what measuring devices are relevant to our needs - - both for identifying the children and measuring behavior changes, and (2) what variables or behavioral changes will serve as indicators of project success.

Selection of Subjects

The initial screening for identifying gifted and talented, K - 8, occurred during the Spring, 1975. Scores from the group Otis-Lennon Test were collected and all children above the cut-off point of 118 I.Q. were given either the Standford-Binet, the WISC or both (N = 400). In addition to the concentrated I.Q. testing, other measuring devices used were: teacher and parent nomination forms and check-lists for measuring leadership, motivation, creativity and learning characteristics; the Torrance and Cummings tests of curiosity and creativity which measured curiosity, fluency, flexibility and originality; the Goodenough Draw-A-Person for developmental testing; Metropolitan Achievement scores of reading and mathematics; a "Way-Out" check sheet for deviant behavior; a self-nomination form and talent rating. Some 18,000 measuring devices were given.

In this effort to identify variables which might be useful in identifying gifted children, interrelationships were established between as many as 57 variables. This was accomplished by means of a correlation analysis and the development of a correlation matrix of the variables. Random computer selection chose the students (N = 200) whose scores were used in the correlation analysis.

The primary question to be answered by the extensive testing and analysis was, "What tests or instruments best serve to identify gifted and talented students?" and "Do these instruments select or identify the same student repeatedly?" The measures used were to identify the intellectually talented, academically able, creative or productive thinking. The talent areas were identified by nomination only--Phase III of the program, 1976-77, professional judges will identify children for talent mini-courses.

Following the correlation analysis, primary selection of gifted and talented children for the program was done using: IQ, Otis-Lennon or individual scores; achievement; creativity, curiosity test and Draw-A-Person; teacher nomination, self-nomination; originality, "Way-Out" test. The selection measures were narrowed from many to few (N = 8). It should be noted that although the Otis-Lennon test yields a lower IQ score than either the WISC or Binet, its correlation with these two IQ tests make it an attractive instrument to be used in the selection process.

The Pilot Program

Project Evaluation Design

Utilizing the instruments identified for selecting gifted and talented children thirty-two (32) students were selected to participate in the pilot program (K-4). A similar group of students were selected to serve as a control or comparison group (N = 29). Of the thirty-two students selected to participate in the pilot program, thirteen (13) were in grades K-2 and nineteen (19) were in grades K-4. A total of 13 (K-2) were from the Kyrene Del Norte School and 19 (K-4) were from the Waggoner School. Although it was planned to randomly select the students, this was not possible. Thus, for the 13 students selected from the Kyrene Del Norte School (K-2) a comparable group (N = 13) was selected from the Waggoner School. Also, for the 19 students (3-4) selected from the Waggoner School a comparable group (N = 19) was selected from the Kyrene Del Norte School.

Each group of subjects satisfied criteria established for identifying gifted and talented subjects. Each test administered was on a pre-post basis for both the project participants and the control group. Thus, the non-randomized control group design was employed: _0_X_0_
0 0

Pilot Program Curriculum

The approach to the program was psychological with Maslow's hierarchy of needs established as the base, both, of the developmental philosophy and the curriculum. The primary overall goal of the project was to help each identified talented and gifted child develop his/her potentialities to the fullest. Incorporating this goal into the curriculum, the model became one of a three-dimensional man, rather than the traditional one-dimensional person viewed by educators. Personalized curriculum prescribed for the talented and gifted incorporated areas of the affective, cognitive and psychomotor domains. The curriculum was further divided into the sub-areas:

Affective Domain — Social Skills / Humanities
Cognitive Domain — Intellectual Skills / Creativity
Psychomotor Domain — Physical Skills / Free Choice Activities

I. Affective Domain

- A. Social Skills
    1. group dynamics
    2. discussion skills
    3. self-concept
    4. valuing
    5. career awareness

- B. Humanities
    1. mythology and metaphor
    2. literature
    3. background in art, drama, music
    4. historical perspective

II. Cognitive Domain

- A. Intellectual Skills
    1. Instruction in perceptual/conceptual elements
        - a. Didactic equipment and games
            - (1) Figural
            - (2) Symbolic
            - (3) Semantic
        - b. SOI lessons
            - (1) Figural
            - (2) Symbolic
            - (3) Semantic
        - c. Shape perception
            - (1) Basic plan and solid geometric figures
            - (2) Symmetry
        - d. Color perception
            - (1) Hue -spectrum range
                - a. primary, secondary, tertiary colors
                - b. complementary colors
            - (2) Intensity - pure-neutral range
            - (3) Value - light-dark range
        - e. Spatial orientation
            - (1) Personal
            - (2) Two-dimensional
            - (3) Three-dimensional
        - f. Visual adjustment
            - (1) Aerial perspective
            - (2) Linear perspective
                - a. one-point
                - b. two-point
        - g. Vocabulary elements from Latin and Greek
        - h. Functional grammar
    2. Instruction in using basic processes
        - a. Comprehension, storage, retrieval, and demonstration of basic knowledge
        - b. Application of specific higher level thinking skills to knowledge
        - c. General reasoning
            - (1) Hypothesizing
            - (2) Elimination logic and sentence reasoning
            - (3) Deductive reasoning
            - (4) Premises of Aristotelian formal logic
            - (5) Inductive reasoning
            - (6) Premises of Non-Aristotelian general semantics

- d. Searching and sharing
  - (1) Description
  - (2) Narration
  - (3) Exposition
  - (4) Argumentation
  - (5) Learning research skills
  - (6) Teaching research skills to others
- e. Evaluating
  - (1) Distinguishing reality from fantasy
  - (2) Distinguishing fact from opinion
  - (3) Distinguishing among several kinds of truth: Intuitional, testimonial, mathematical, experimental
  - (4) Distinguishing among reports, inferences, and value judgments
  - (5) Extensive evaluation of self and others
  - (6) Intensive evaluation of self and others

B. Creativity
- 1. Experience in multiple talent areas
  - a. Basic creativity: fluency, flexibility, originality
  - b. Planning: Elaboration, sensitivity to problems, organizing abilities
  - c. Communication: expressional fluency, associational fluency, word fluency
  - d. Forecasting: Conceptual foresight, penetration, social awareness
  - e. Decision making: experimental evaluation, logical evaluation, judgment
- 2. Independent studies using a variety of cognitive skills and creative talents

III. Psychomotor Domain

A. Physical Skills
- 1. Motor-perceptual activities
- 2. Chants and rhythms
- 3. General movement education
- 4. Specific activities: modern dance, ballet, gymnastics, yoga, tai chi, etc.

B. Free choice activities
- 1. Games equipment
- 2. Arts and crafts
- 3. Special projects - individual and small group in art, dance, dramatics, music

The above outline indicates or suggests the types of activities and experiences the pilot program children were exposed to during the time the pilot program functioned. Each of the tasks (experiences) encompass a level within a given domain of the 3 taxonomies of educational objectives. In this fashion attempts were made to provide experiences which take the student through the various levels within the hierarchies of the various domains. The pilot progr functioned from October, 1975 through May, 1976 with post testing completed during the last month of school.

Although the outline of the curriculum presented above lacks detail and specificity, a curriculum guide is in process and will be available from the Kyrene School District at a future date. A format has been developed for the curriculum guide which provides detail and specificity for the experiences and activities implemented with the gifted children.

Program Effectiveness - Data Sources

Cognitive

In the cognitive area, the Peabody Picture Vocabulary Test (PPVT), Peabod Individual Achievement Tests (PIAT), and the Draw-A-Person Test were utilized. The PIAT measures achievement in the areas of: general information, reading recognition and comprehension, mathematics and spelling.

Affective

In the affective area, the Coopersmith Self Esteem Inventory (SEI) and th California Test of Personality (CTP) were utilized. The SEI provides a measur for self-concept and the CTP for social, personal, and total adjustment.

Interest

For the interest area the School Sentiment Index was utilized which provi an assessment of the students' attitude toward school.

Creativity or Giftedness Area

Three Torrance tests, the Cummings Curiosity test and the Draw-A-Person t (DAP) were utilized for measuring creativity or giftedness.

All data used in evaluating the effectiveness of the project was collecte by project staff, using pencil and paper tests, questionnaires, inventories, a check lists.

The pre and post test scores were analyzed by means of a student's t-tes The null hypothesis was tested for each of the 18 measures at the .05 level o significance.

SECTION III

DATA ANALYSIS AND FINDINGS

On the pages which follow, each of the seven (7) objectives stated previously in this report are considered individually. Evaluation of pre and post test scores, project produced documents, and observation of project activities have been utilized to gather data relative to each of the previously stated objectives. Only students for which pre and post test scores were available were included in the data analysis.

Objective 1: By June 30, 1975, criteria for the identification of gifted and talented students will have been developed, and an exemplar program and basic curriculum guidelines will have been formulated for the development of individual uniqueness in identified gifted and talented children.

Data was collected on 400 subjects in the Kyrene District during the Spring, 1975. Measurements were obtained on as many as 57 variables. A sample of 200 subjects was selected, and by means of correlation analysis, interrelationships were established between these 57 variables for these 200 subjects. Utilizing the information provided, the selection measures were narrowed from a large number to as few as 8.

It was generally concluded that selection of gifted and talented subjects is best accomplished by using a variety of indicators. This is certainly logical when one considers that giftedness is multidimentional.

For purposes of identifying gifted children for the pilot program the following were used: I.Q., achievement, creativity, teacher & self nomination, and originality. Children with special talents were identified by nomination only.

General guidelines for the curriculum were developed and served as the basis for additional curriculum development. These general guidelines appeared in a project publication entitled, We Are Each Like The Unicorn - Unique and Rare. This publication outlines the philosophy, curriculum, qualifications for the program, teacher selection, concepts related to the gifted and talented program, and myths about gifted and talented students. This document has been submitted to ERIC for abstracting, indexing, and dissemination. It will appear in the near future in RIE (Research In Education).

Conclusion: The project has identified instruments, measurements, and means of identifying gifted and talented students. Also, basic curriculum guidelines were established which provided a basis for additional curriculum development.

Recommendation: Now that the project has been successful in identifying 8 variables to be used in identifying gifted children, it would appear natural to analyze these 8 variables in an attempt to rank order them or place them in a priority list. This of course assumes that perhaps a criterion measure could be identified for gifted children. Perhaps the first step would be to seek this criterion measure.

Objective 2: By May 30, 1976, Curriculum which specifies the experiences and activities implemented with the gifted and talented children will be developed.

The Kyrene School District is in the process of preparing a handbook or curriculum guide for dissemination. This document is to include an introduction, philosophical background, phases involved in developing a program, procedures for identifying gifted and talented students, curriculum design, possible classroom or environmental organizational structure for gifted programs, selection and roles for personnel, advisory council, aids for parents, developing a newsletter, and other concepts related to a gifted and talented program.

A major portion of the above mentioned document will be devoted to curriculum. It is anticipated that this section of the document will contain several sample lessons in the various sub-areas of the curriculum (see Section II - pilot program curriculum - this report). Learning experiences and activities implemented with the gifted and talented children are to be described with sufficient detail and specificity for a classroom teacher to implement the model presented. It is anticipated that the format developed will include such items as:

1. Time required (# of lessons) and for what grade levels
2. Concept to be developed
3. Behavioral objective(s)
4. Introduction or lesson approach
5. Materials needed
6. Resources
7. Lesson development (teacher tasks)
8. Student behavior engaged in (by task)
9. Level of domain aimed at (by task)
10. Terminal behaviors to be displayed (by task)
11. Recommended extended or supplementary activities

Conclusion: Curriculum or a description of those experiences or activities provided for the program or project for the gifted children has been developed and will be in a format suitable for widespread dissemination.

Recommendation: It would appear that preparations need to be made for demonstrating the activities and learning experiences which take place in the gifted program during the 1976-77 project year. I would anticipate that as teachers of gifted children become aware of the Kyrene project and gain access to the curriculum guide they will want to visit the project while it is in operation. This will provide a good opportunity for dissemination, but it also means planning must take place.

Objective 3: By May 30, 1976, students identified as gifted or talented and participating in a pilot program will show an improvement in high level cognitive thinking as measured by pre - post test results of cognitive thinking measures.

The Peabody Individual Achievement Tests (PIAT), Peabody Picture Vocabulary Test (PAVT), and the Draw-A-Person Test were administered on a pre - post basis for assessing changes in cognitive behavior resulting from program or project participation.

The PIAT tests provided information relative to mathematics, reading recognition, reading comprehension, spelling, general information, and a composite measurement. The PPVT test provides information relative to vocabulary skill, and the Draw-A-Person Test served as a developmental or artistic ability measure.

The results of the PIAT tests indicated that there was no significant differences between the groups in all areas when the project began (see Table I). This was also true for the PPVT test results. The pilot group made significant gains from pre to post test in all areas except spelling ($P < .01$). The control made significant gains from pre to post test in only the area of spelling ($P < .05$). The pilot group, even though comparable to the control group on the pretest, scored significantly higher than the control group on the post test in mathematics ($P < .01$) and general information ($P < .05$). (See Table I).

The changes in cognitive behavior when comparing the two groups was even more revealing. The change in behavior between pre and post tests for the pilot group was significantly greater than the change experienced by the control group in the areas of mathematics ($P < .05$), reading recognition ($P < .01$), reading comprehension ($P < .01$), general information ($P < .01$), and composite measurement ($P < .01$). This was not true in the area of spelling; the changes experienced by the two groups were not significantly different at the .05 level of significance. (See Table I).

The PPVT results indicated the two groups were not significantly different when the pilot program began or when the program ended. However, the pilot group experienced a significantly greater increase in vocabulary test performance than did the control group. ($P < .01$). The control group actually scored lower on the post test though it was not found to be significantly lower ($P > .05$). (See Table I)

The results of the Draw-A-Person Test were somewhat startling. The control group had a significantly higher performance level ($P < .01$) on the pretest than did the pilot group. The groups were also significantly different when post test results were compared, but on the post test the pilot group performed significantly better than the control group ($P < .05$). The pilot group had made significant gains from pre test to post test ($P < .01$) but the control group had not. The result of these differences in gains (8.7 vs 1.2) also indicated that the pilot groups' change in performance was significantly better than the control groups' ($P < .01$). (See Table I)

TABLE I

COGNITIVE MEAN COMPARISONS OF PILOT AND CONTROL GROUP TEST RESULTS ON PIAT, PPVT, AND DRAW-A-PERSON TEST

COGNITIVE AREA	PILOT GROUP (N = 31)	CONTROL GROUP (N = 29)	t-RAT
	Pre M = 41.7	Pre M = 37.8	1.154
	s = 15.3	s = 9.7	
Mathematics	Post M = 47.6	Post M = 39.3	3.127
	s = 11.6	s = 8.5	
	t-ratio 3.721**	t-ratio 1.083	
	change 5.9	change 1.5	2.124
	Pre M = 39.3	Pre M = 41.0	.645
	s = 11.2	s = 10.0	
Reading	Post M = 46.3	Post M = 42.2	1.237
	s = 15.3	s = 9.6	
Recognition	t-ratio 5.887**	t-ratio 1.933	
	change 7.0	change 1.2	4.333
	Pre M = 35.7	Pre M = 40.5	1.661
	s = 12.0	s = 10.1	
Reading	Post M = 42.4	Post M = 39.9	.933
	s = 11.5	s = 9.3	
Comprehension	t-ratio 5.297**	t-ratio .721	
	change 6.7	change -.6	4.774
	Pre M = 38.1	Pre M = 38.1	.002
	s = 11.4	s = 10.6	
Spelling	Post M = 40.8	Post M = 39.7	.410
	s = 10.9	s = 9.5	
	t-ratio 1.980	t-ratio 2.165*	
	change 2.7	change 1.6	.685
	Pre M = 34.5	Pre M = 35.8	.358
	s = 16.0	s = 11.9	
General	Post M 43.2	Post M = 36.9	2.035
	s = 12.4	s = 11.6	
Information	t-ratio 5.634**	t-ratio 1.191	
	change 8.7	change 1.1	4.200
	Pre M = 188.7	Pre M = 192.6	.283
	s = 57.3	s = 49.3	
Composite	Post M = 220.1	Post M = 197.0	1.787
	s = 54.4	s = 44.8	
PIAT	t-ratio 8.716**	t-ratio 1.754	
	change 31.4	change 4.4	6.082
	Pre M = 76.8	Pre M = 78.4	.595
	s = 11.0	s = 9.4	
Vocabulary	Post M = 81.7	Post M = 77.0	1.559
	s = 14.1	s = 8.9	
PPVT	t-ratio 3.426**	t-ratio 1.180	
	change 4.9	change -1.4	3.348
(N = 32)	Pre M = 19.2	Pre M = 23.4	2.620
	s = 5.9	s = 6.6	
Draw-A-Person	Post M = 27.9	Post M = 24.6	2.256
	s = 6.5	s = 4.9	
	t-ratio 6.010**	t-ratio 1.004	
	change 8.7	change 1.2	3.956

* Indicates significant difference between means at .05 level of significance
** Indicates significant difference between means at .01 level of significance

Conclusion: The program or project has been effective in fostering change in cognitive skills or performance levels in the areas of mathematics, reading recognition, reading comprehension, general information, composite achievement, vocabulary, and developmental or artistic ability.

Recommendation: It is recommended that consideration be given to modifying the cognitive testing program for the new project year. Since the composite achievement score on the PIAT and perhaps even the Draw-A-Person test scores do not seem to add any additional or meaningful information it would appear that they could be deleted from the future testing program. It is recommended that efforts be exerted to expand measurements in the cognitive areas to include such areas as science, mathematical concepts, mathematical applications, and perhaps even measurements in logical thinking as a cognitive skill. With the indicated success of the program in developing cognitive skills, efforts to determine just what cognitive skills can be improved by the activities and experiences provided by the program need to be exerted.

Objective 4: By May 30, 1976, identified students participating in a pilot program will show an improvement in creativity as measured by pre - post test results of creativity measures.

Three Torrance Tests, the Cummings Curiosity Test, and the Draw-A-Person Test (DAP) were administered on a pre - post basis for assessing changes in creativity or giftedness resulting from project or program participation.

The Torrance Tests included picture completion (I), free form (II), and lines and circles (III). A total or composite score of these three tests was also analyzed. The Cummings Curiosity Test was found to be correlated with the Torrance Test. This test consists of a picture such as an apple or several pictures which serve as stimuli. The student is asked to indicate questions raised in his mind about the picture. The DAP Test was found to correlate with the Torrance Tests as well as achievement. Thus, this was also used as an indicator of creativity or giftedness.

The DAP Test results were presented under objective 3 and, as presented, these test results indicate that the program was effective in producing changes in the pilot group which were significantly greater than control group changes. (See Table I). Thus, these results suggest that creativity is also fostered by the program. No additional discussion of the DAP Test results will be presented for objective 4.

The results of the Torrance Tests and also the Curiosity Test indicated that the pilot group made significant gains from pre to post test ($P < .01$) on all five tests. The control group made significant gains from pre to post test ($P < .01$) only on the Curiosity Test. (See Table II).

Test results in all five cases indicated that the pilot group made significantly greater gains between pre and post test ($P < .01$) than the control group. On the Torrance Test I (picture completion) the two groups were not significantly different when the program began, but the pilot group scored significantly better than the control group on the post test ($P < .01$). This also resulted in significant differences in the groups' gains which was previously pointed out. (See Table II). On the remaining three Torrance Test means and also the Curiosity Test means, the control group performed significantly better than the pilot group at the time of the pretest. However, at the time the post tests were administered the pilot group performed significantly better than the control group in all four instances. On two of the Torrance Tests and also the composite score the control group decreased in performance, however, this decrease was not significant. ($P > .05$) (See Table II).

TABLE II

CREATIVITY MEAN COMPARISONS OF
PILOT AND CONTROL GROUP TEST
RESULTS ON TORRANCE AND CURIOSITY TESTS

TEST	PILOT GROUP (N = 32)	CONTROL GROUP (N = 29)	t-RATIO
Torrance I Picture completion	Pre M = 20.5	Pre M = 20.8	.123
	s = 8.8	s = 10.1	
	Post M = 34.3	Post M = 21.3	3.677**
	t-ratio 4.432**	t-ratio .200	
	change 13.8	change .5	3.325**
Torrance II Free Form	Pre M = 56.9	Pre M = 71.0	2.650**
	s = 23.0	s = 18.2	
	Post M = 94.8	Post M = 67.0	3.931**
	s = 32.3	s = 21.2	
	t-ratio 8.280**	t-ratio 1.222	
	change 37.9	change -4.0	7.311**
Torrance III Lines & Circles	Pre M = 74.6	Pre M = 95.5	2.638*
	s = 34.4	s = 26.1	
	Post M =134.8	Post M = 88.6	3.934**
	s = 53.2	s = 35.6	
	t-ratio 7.348**	t-ratio .969	
	change 60.2	change -6.9	6.140**
Torrance Total I + II + III	Pre M =149.4	Pre M =187.4	2.923**
	s = 55.4	s = 44.9	
	Post M =259.6	Post M =176.6	4.411**
	s = 85.0	s = 58.0	
	t-ratio 9.989**	t-ratio 1.091	
	change 110.2	change -10.8	8.092**
Curiosity Test	Pre M = 12.2	Pre M = 21.5	2.021*
	s = 10.1	s = 23.8	
	Post M = 55.5	Post M = 29.7	3.012**
	s = 59.3	s = 25.2	
	t-ratio 5.860**	t-ratio 3.354**	
	change 43.3	change 8.2	4.590**

* Indicates significant difference between means at .05 level of significance
** Indicates significant difference between means at .01 level of significance

Conclusion: The program or project has been effective in fostering change in creativity or giftedness.

Recommendation: It is recommended that the project staff seriously consider utilizing only the Curiosity Test as the measure of creativity during the next project year. This test, being correlated with the Torrance Tests, appears to provide valid information regarding creativity. The time required to administer the Torrance Test when compared to the time required to administer the Curiosity Test certainly makes the Curiosity Test an attractive instrument for use during the next project year.

Objective 5: By May 30, 1976, identified students participating in a pilot program will show an improvement in school attitude as measured by pre - post test results of a school sentiment measure.

The School Sentiment Index instrument was administered on a pre - post basis for assessing changes in student's attitude toward school resulting from or contributed to by participation in the pilot program or project.

Analysis of the results of the School Sentiment Index indicated that there were no significant differences between the pilot group and control group (P> .05). These two groups were not significantly different on the pretests or the post tests. Thus, there was also no significant differences in the groups' gains or changes from pretest to post test. In addition, neither group experienced significant changes in their attitudes toward school from the time the project began until it ended. (See Table III).

TABLE III

ATTITUDE TOWARD SCHOOL MEAN
COMPARISONS OF PILOT AND CONTROL GROUP TEST
RESULTS ON SCHOOL SENTIMENT INDEX

PILOT GROUP (N = 32)	CONTROL GROUP (N = 28)	t-RATIO
Pre M = 26.9	Pre M = 27.6	.456
s = 6.4	s = 6.0	
Post M = 26.7	Post M = 26.1	.339
s = 7.2	s = 6.0	
t-ratio .236	t-ratio 1.466	
change -.2	change -1.5	.873

Conclusion: The program or project has not been effective in fostering change in attitudes toward school. Attitude toward school is a seemingly stable variable and thus difficult to change or modify over a short period of time. Perhaps the time span of the project was too short to realize a change in the students' attitude toward school.

Recommendation: The rationale for administering the School Sentiment Index still exists. If these gifted children enjoy the experiences and activities provided by the program, they should ultimately like school better as a result of participating in the program. It is recommended that the School Sentiment Index be utilized during the next project year. The project will be functioni from August, 1976 or September, 1976 to May, 1977. Hopefully, with the short time added and modifications occurring in the program based upon this year's experience, the program can contribute to a change in participants' attitudes toward school.

Objective 6: By May 30, 1976, identified students participating in a pilot program will show an improvement in self-concept as measured by pre - post test results of a self-concept measure.

Coopersmith's Self Esteem Inventory (SEI) was administered on a pre - pos basis for assessing changes in self-concept resulting from project or program participation.

The results of the data analysis indicated that there were no significant differences between the pilot group and the control group (P> .05). These two groups were not significantly different on the pretests or the post tests. Th there were also no differences in the groups' gains or changes from pretest to post test. In addition, neither group experienced significant changes in thei self-concepts from the time the project began until it ended. (See Table IV).

TABLE IV

SELF-CONCEPT MEAN COMPARISONS
OF PILOT AND CONTROL GROUP TEST
RESULTS ON SELF ESTEEM INVENTORY

PILOT GROUP (N = 32)	CONTROL GROUP (N = 29)	t-RATIO
Pre M = 69.9	Pre M = 69.5	.115
s = 15.0	s = 13.4	
Post M = 71.4	Post M = 72.3	.236
s = 14.2	s = 15.6	
t-ratio .509	t-ratio 1.017	
change 1.5	change 2.8	.336

Conclusion: The program or project has not been effective in fostering change in participants' self-concept. This variable, much like attitude toward school, is a seemingly stable variable and requires a longer time period to be changed or modified.

Recommendation: It is recommended that the Self Esteem Inventory be utilized during the next project year. In addition, project staff need to be aware that change or modification of a student's self-concept requires conscious efforts toward such modification. Emphasis needs to be placed on constant success within the program. Approaches towards modifying student's self-concept need to be incorporated into pre-service or pre-program training and continued in an inservice training program.

Objective 7: By May 30, 1976, the participating students in a pilot program will show a positive change in their personality profile as measured by pre - post test results of a personality test.

The California Test of Personality (CTP) was administered on a pre - post basis for assessing changes in personality resulting from project or program participation. The CTP provides information or subtest scores for social adjustment, personal adjustment, and total adjustment.

Data analysis revealed that there were no significant differences between the pilot group and the control group in the areas of personal adjustment, social adjustment, or total adjustment ($P > .05$). These two groups showed no significant differences in these three areas on the pretests, post tests, and gains or changes. (See Table V).

Data analysis further revealed that only 34.4% of the pilot group increased in personal adjustment scores, 53.1% decreased and 12.5% remained the same between pretest and post test. Only 34.4% increased in social adjustment and 65.6% decreased. Also, 34.4% increased in total adjustment, 59.4% decreased, and 6.3% remained the same between pretest and post test. These changes between pretest and post test for the pilot group were not significant. Thus, the pilot group did not score significantly different between pretest and post test on personal adjustment, social adjustment, or total adjustment measures.

Results for the control group were similar to the pilot group. A total of 44.8% increased in personal adjustment, 51.7% decreased, and 3.4% remained the same. On social adjustment 27.6% increased, 65.5% decreased, and 6.9% remained the same. Total adjustment analysis revealed that 44.8% increased and 55.2% decreased. These changes between pretest and post test also were not significant for the control group.

TABLE V

PERSONAL, SOCIAL, AND TOTAL ADJUSTMENT
MEAN COMPARISONS OF PILOT AND CONTROL
GROUP TEST RESULTS ON CALIFORNIA TEST OF PERSONALITY

TEST	PILOT GROUP (N = 32)	CONTROL GROUP (N = 29)	t-RATIO
Personal Adjustment	Pre M = 38.4	Pre M = 39.1	.196
	s = 11.2	s = 13.9	
	Post M = 37.5	Post M = 39.7	.717
	s = 9.5	s = 13.7	
	t-ratio .717	t-ratio .478	
	change -.9	change .6	.846
Social Adjustment	Pre M = 39.8	Pre M = 42.4	.952
	s = 8.5	s = 12.4	
	Post M = 39.2	Post M = 40.3	.453
	s = 9.0	s = 10.3	
	t-ratio .523	t-ratio 1.184	
	change -.6	change -2.1	.675
Total Adjustment	Pre M = 78.2	Pre M = 81.5	.607
	s = 17.7	s = 25.5	
	Post M = 76.7	Post M = 80.0	.624
	s = 17.0	s = 23.0	
	t-ratio .671	t-ratio .606	
	change -1.5	change -1.5	.054

Conclusion: The program or project has not been effective in fostering change in participant's personal, social, or total adjustment as measured by the California Test of Personality. Once again, this variable is a seemingly stable variable and requires considerable time to be changed or modified.

Recommendation: It is recommended that the California Test of Personality be utilized during the next project year. Particular attention should be given to gifted students who remain in the program for a second year to see if the extended time in the program can produce significant changes in their personal, social, and total adjustment measures.

SECTION IV

SUMMARY COMMENTS

During the two years this project has been functioning, the project has been successful in planning and developing procedures and instruments for identifying gifted and talented students. Also, an exemplar program and basic curriculum guidelines were formulated for the development of individual uniqueness in gifted and talented children. The project has moved from its planning stages into implementation. In this movement curriculum has been developed to provide gifted and talented children experiences and activities to aid in developing their uniqueness. The handbook or curriculum guide resulting from this project should serve as a valuable aid to others desiring to establish a program for gifted and talented children.

During these same two years the project or program has proven to be effective in modifying or changing gifted and talented children's behavior in the areas of mathematics, reading recognition, reading comprehension, general information, vocabulary, general ability, and creativity. The project or program has not proven to be effective in modifying or changing gifted and talented student's behavior in the areas of attitude toward school, self-concept, personal adjustment, social adjustment, or total adjustment.

It is recommended that the exemplar program planned, developed, and tested on a pilot basis be fully implemented during the third year of the project in grades K-4 and implemented on a pilot basis in grades 5-8. In this way data can be gathered to further validate the model or program in grades K-4, and data can also be gathered relative to its effectiveness in grades 5-8. During this same time curriculum can be written, tried, revised, and finalized specifically for grades 5-8.

The project and program has come a long way and accomplished a great deal in these two years. It is not unrealistic to expect even greater results during the next year.

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